A MODULAR SYSTEM FOR COMPARISON OF NAVIGATION ALGORITHMS IN VISUAL DATA EXPLORATION

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Preface

Navigation of visualization process involves large, complex, unclassified data sets and multidimensional, nonlinear, discontinuous mapping functions. Thus, getting a desirable data from those data sets is usually a painful process. It is then important to know what is the best technique to do the navigation process. Many algorithms have been developed to improve the navigation process. But since each of those algorithms has its own approach and test data sets, a system that can compare the performance of those algorithms is needed.

This thesis is about a modular system that is designed especially for testing and comparing those algorithms with various data sets. The system is divided into six components. Each component can have several different types and can be easily taken off from the system and substituted with other components. The system uses network so that many users can access the system and giving feedback at the same time. This can help speeding up the navigation process. XML template is used to assign values to test data sets instead of having several test data set files. We will compare the system proposed with several test data sets: OpenGL standard objects, real world objects, and scientific data sets.

Acknowledgment

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Chapter 1

INTRODUCTION

Navigation in visualization is a process of exploring complex, large, unclassified-data sets, to get a desirable output image via visualization. In order to get insight from large data sets, two things are needed [12]:

1. Efficient algorithms. Efficient algorithms are designed so that given input parameters, a desirable output image will be generated in a minimum amount of CPU time, user interaction, and feature space.

2. Intuitive user interfaces (UIs). Efficient algorithms will be useless unless there are intuitive user interfaces (UIs) that can help presenting and storing the visualization exploration process.

Many papers and projects have been made in developing efficient algorithms. Those papers and projects try to improve navigation in visualization process by developing algorithms that can yield a desirable output image accurately and economically.

Some user interfaces (UIs) have also been designed to support the algorithms in displaying and storing the navigation process, so that the resulting images throughout the process can be reused and percepted more easily.

User Interfaces (UIs) is also essential in navigation process. Without an intuitive user interface (UI), it will be hard to retrieve the parameters of an image, or to which direction will the exploration process have to be continued. It will also be hard to decide which generator is best for large or small set of data, etc.

Generator, a component where the algorithm is located, is the main part in navigation system, since given a set of random input vector, it is trying to find input parameter vectors which output vectors resulting a dispersed set of images. Generators will then wait for the feedback from the user about the first generated images, and make another set of images based on the feedback, and so on. Therefore, the successful of navigation system is highly depending on the generators (algorithms) and the intuitive user interface to guide the user in percepting resulting images.

1.1 Navigation Algorithm Problem

Many algorithms and user interfaces (UIs) have been designed to improve the navigation of visualization process. Many generators have been developed; each is developed to make the navigation process more accurate and economical, and some are developed to optimize the previous ones. Some algorithms that are used to do the navigation process are algorithms that originally implemented for content-based image retrieval.

Those types of algorithm are used for classifying images that are in the database. To do navigation process using these types of algorithms, new set of images then has to be computed based on the classification.

With so many algorithms available, it is then hard to decide which algorithms have the overall best performance for which type of datasets tested. Each algorithm is tested with its own test datasets and with its own measurement of performance. Each of those algorithms has its advantages and disadvantages, depends on many factor, such as the type of test dataset used, or the size of the dataset. Thus, to test each dataset efficiently and optimally, it is essential to know which algorithm that should be used.

The problem is, there is no specific system has been especially designed to test and compare the performance of the generators in several measurement aspects. A system that can test and compare the performance of those algorithms is then need to be implemented.

1.2 Contribution to the Work

Since it is essential to know each algorithm's advantages and disadvantages, a modular system that is able to test and compare between the generators is then implemented. Thus, we know what each generator best used for.

This thesis is about a modular system that is especially designed for testing and comparing generators. The interface of the system itself is designed similar to

Design-Galleries [29]. The system is able to test many generators and define each generators advantages and disadvantages. It can measure the performance of each generator in generating input parameter vector; it can measure the time needed to give the user the image that he wants.

The system built is measuring the user interaction (how much time needed to find the desired image and number of deadends), CPU time, and the similarity measures between the current set of images and the desired image. There are four similarity measures used, which are Gabor, Color Histogram, Haralick, and Correlation. And seven types of generator are used for this comparison process, which are Random, Peng [35]. PFRL [11, 34], SVM Light [4], SVM-Peng [4, 35], Transductive SVM [21, 31, 43], and BSVM [18].

Chapter 2

DEVELOPMENT IN NAVIGATION IN VISUALIZATION

Navigation of visualization techniques are now developing rapidly. Researchers are intensively developing better and better visualization algorithms and user interfaces. The developments in user interface part are mainly to support the development in algorithms, so that the user can interpret and retrieve the data more easily.

2.1 Development in User Interface

There used to be no specific system was designed to support the navigation process. There was not even any specific algorithm used to select the rendering parameters at that time. All things were done manually. The process of data exploration was more like a process of trial and error (turn-key). The user kept trying various combinations of rendering parameters until he found the output image that he was looking for.

Turn-key method seemed to exhaust the user. Therefore, algorithms started to be used to navigate the selection of input parameters. An actual system with the algorithm in it then started to be designed too to help improving the process of navigation. Data-flow model [10] was widely used for commercial used. This model allows the user to construct directed graphs representing the flow of data through the system. An image graph stores information about data exploration, and is unique because of its intuitive edge representation and dynamic features.

The problem with data-flow model is that there is no way to retrieve the visualization process. The input parameter vectors that generate images between the beginnings until the end of flow nodes are not saved. Therefore, there is no way to retrieve those images back.

As large multidimensional data set is used, navigation of visualization process needs a system that can support visibility so that the whole system can be displayed in one screen, and reusability, which means a user interface that can keep track of the previous images generated (history). Many papers and projects have been done to develop techniques that can solve this visibility and reusability problem.

Some simple techniques used to solve visibility problem are: zoom techniques, graph compression, or focus+context techniques [26], or fisheye lense [10]. Herman et al. [12] has done a survey of visualization and navigation techniques. Keim [23] classified visualization techniques based on the data type to be visualized, the visualization techniques, and the interaction and distortion techniques.

Some other papers developed new techniques, especially visualization techniques where all data can be seen in one screen. Fua *et al.* [8] developed structure-based brushes that allow users to navigate hierarchies of graph by specifying the specific part and the level-of-detail. Keim [22] developed pixel-oriented visualization technique to help exploring and analyzing large amount of multidimensional data. It maps each dimension of multidimensional data to color in a subwindow, and decide the arrangement, shape, and ordering of subwindows. Abello and Korn [1] developed MGV, a navigation technique for massive multigraphs that combines interactive pixel-oriented 2D and 3D map, statistical displays, color maps, multilinked views, and a zoomable label based interface. Kreuseler and Schumann [25] developed another new visualization technique to gain more insight from the information space, including an intuitive focus+context technique. Some of the techniques will make the graph hard to be visualized. It is hard to find out where we are, and which direction should we search what we want. Each of those techniques will make the resulting images sometimes distorted and hard to be percept and compared.

Parameter-based representation system is then made. This type of representation does not intend to display the whole data in one screen. It displays only a portion of data, and let the user interactively steer the system to display the image that he wants using several techniques, for example: machine learning, artificial intelligence, image graph, or spreadsheet. This way, the data shown on the screen at one time is visible, and so it is easier to be percepted. The systems that fall into this category are Image Graphs [28], Spreadsheet-like Interface [20], and Design Galleries [29].

Image Graph [28] is a system with a unique nodes-and-edges representation. Each edge connects two different nodes, and represents one of six different rendering parameters: color map, opacity map, rotation, zoom factor, shading, and resampling. It symbolizes the connection between two nodes, noted what parameter changed between the two nodes. Only one parameter can be changed from one node to another. Each mode simply represents the image itself, and it also keeps with it the input parameter vector that is used to generate the image.

Figure 2.1 is taken from paper by K. L. Ma [28], shows us a portion of Image Graph representing the exploration of a foot dataset. The numbers added to the graph to show the order of nodes generated. Each edge notates what parameter changes each time. From Node 1, the user changes the color parameter, opacity, and direction of the image to get Node 2 as the resulting image. Node 3 is the result of rotation that is applied to Node 1.

As more images added, Image Graph needs more and more space to display the entire visualization process. Because of the limitation of screen space, and also for visibility aspect, Image Graph is not efficient for large data set with multidimensional rendering parameters. Therefore, when large data set inputs are used, special techniques similar to visualization techniques then have to be applied to maintain the visibility of the system.

Spreadsheet-like system [20] has rows and columns, where each row and column defines what parameter used and what is the value of it. With this interface, the comparison process can easily be seen, and the history of images can easily be traced back.

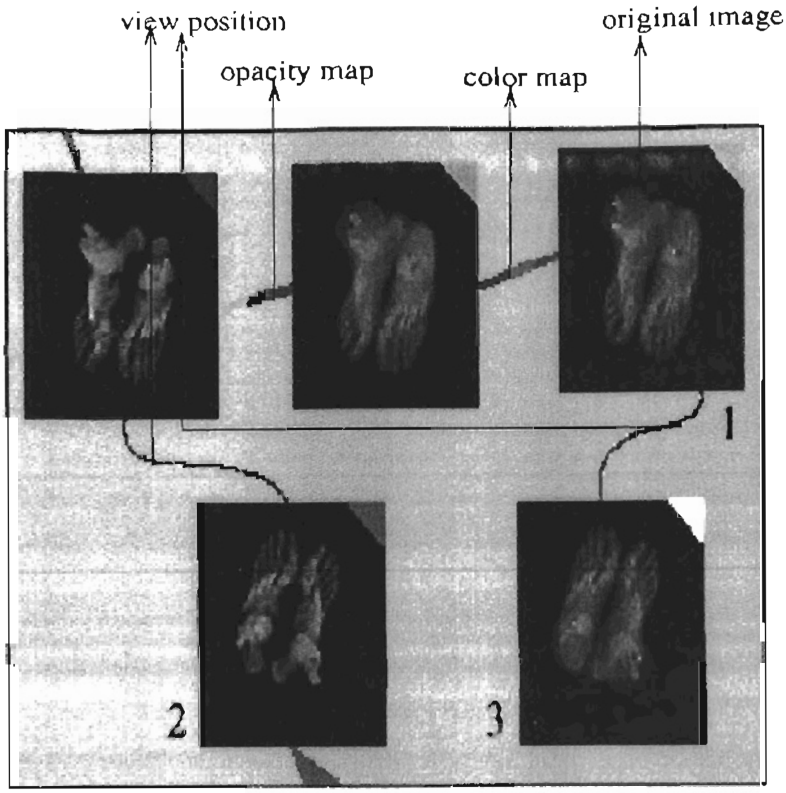

Figure 2.1: A portion of Image Graph representing the exploration of a foot dataset. This figure is taken from paper by K. L. Ma [28] page 83 Figure 3.

Figure 2.2 is taken from paper by K. L. Ma and T. J. Kelly [20], shows the effectiveness of Spreadsheet-like Interface for comparing skin and bone surface. With this interface, the difference between images can be seen more clearly by comparing between rows and columns. On the first row, the opacity of the foot is determined, then the view position, color, and finally zoom factor.

Sometimes not all kind of data can be explored by using spreadsheet-like interface. Design Galleries [29] uses dispersion algorithm which given a set of light, finding a set of input vector that resulting output vector can optimally yield disperse images. Those images are expected to have the broadest selection of perceptually different graphics that are produced from broadest selection of input-parameter vector. Arrangement technique in Design Galleries will then represent the resulting images in a way so that those results can be percept more easily. The arrangement depends on the w (width) and h (height) value, where w defines the number of images per level, and h defines the number of level.

Figure 2.3 is taken from a paper by Andalman *et al.* [29], shows us the interface of Design Galleries with varying light selection and placement. In this picture, the weight (w) of the interface is 8, and the height (h) of the interface is 3. The user defines these values.

2.2 Development in Generator

Dispersion algorithm is important in finding input parameter vectors that can yield output vectors with disperse resulting images. Nowadays, dispersion algorithm is included in a part of a system called generator (Figure 4.4). In generator, dispersion algorithm based its next sampling on the feedback from the previous sampling process that inputted to it. It will learn interactively which direction it will sample based on the feedback.

There are many kinds of techniques used to make sampling based on the previous feedback to be effective. Active learning and adaptive resampling are used for this relevance feedback technique. What the advantages and disadvantages of each technique are still questionable. Therefore, a modular system that is able to test and compare the performance of generators needs to be made.

Random Generator is a generator where the dispersion algorithm accepts no feedback from the user. It randomly samples images each time. This generator has random amount of time to find the desired image; the overall performance is predictably not really good.

There are already several projects made to develop more dispersion algorithm that take feedback from the user, and can learn fast from the feedback given. They have to be able to sample images that are closer and closer to the desired image in a smallest amount of time.

One of the generator with relevance feedback technique is Peng Generator [35], which given previous images feedback, makes new samples around the positive samples of the previous images. Given labeled data, it finds the mean value of each feature among the relevant data. It also finds the mean distance from each of the relevant data to the mean data. And from that mean values and mean distance values, new samples are computed by finding data around those mean values, with a maximum distance of mean distance values from the mean values.

The other technique is based on paper by Peng *et al.* [34] and Heisterkamp *et al.* [11]. Given previous images' feedback, it uses Probabilistic Feature Relevance Learning and its combination with Query Shifting to retrieve similar images. It extracts images features and calculates their distances compare to other images, and return images with minimum distances.

This technique optimizes K-nearest neighbor kind of algorithms. K-nearest neighbor kinds of algorithms use the same weights for measuring each feature importance. Given similarity metric, the weights remain fixed in the computation. PFRL technique optimize this by assigning different weights for different features, depends of their importance in deciding the relevancy of data. This is important, since similarity does not vary with equal strength or in the same proportion in all directions in the feature space emanating from the query image. PFRL uses probabilistic method that enables image retrieval procedures to automatically capture feature relevance based on user's feedback and that is highly adaptive to query location. The weights can be calculated by first estimating the relevancy of each feature. If we have:

$$(x_j, y_j)_1^K$$

with: x_j denotes the feature vector representing jth retrieved image, and y_j represents the label (relevant or irrelevant), then the estimation of relevance, which uses the data from the vicinity of x_i at z is:

$$E[y|x_i = z] = \frac{\sum_{j=1}^{K} y_j 1(|x_{ji} - z| <= \Omega)}{\sum_{j=1}^{K} 1(|x_{ji} - z| <= \Omega)}$$

From this estimation, we can define a measure of feature relevance for query z as:

$$r_i = E[f|x_i = z]$$

And the weights is then:

$$w_i(z) = \frac{exp(Tr_i(z))}{\sum_{l=1}^{q} exp(Tr_l(z))}$$

with T is a parameter that represent the influence of r_i on w_i. If T = 0, we have $w_i = 1/q$, which means the weights are considered equal as in conventional K-near neighbor algorithm. Thus, the distance between two images is then:

$$D(x,y) = \sqrt[2]{\sum_{i=1}^{q} w_i(x_i - y_i)^2}$$

I then developed two new techniques that also consider the importance of certain feature in deciding the relevancy of an image. These techniques also consider that one feature of an image may not have the same importance as other features in deciding an image's relevancy.

The first technique (MyGenerator1) finds the feature that has the smallest distance to the mean of relevant samples. The smaller the distance to the mean of relevant sample means the bigger distance to the mean of irrelevant samples. That feature will be the most important feature that decides the relevance of an image.

Consider images A and B (relevant), C and D (irrelevant), with n features each: $A : A_1, A_2, ..., A_n$, $B : B_1, B_2, ..., B_n$, $C : C_1, C_2, ..., C_n$, $D : D_1, D_2, ..., D_n$. The mean of relevant images is: $AB^+ = \frac{A_1+B_1}{2}, \frac{A_2+B_2}{2}, ..., \frac{A_n+B_n}{2}$. The mean of irrelevant images is: $CD^- = \frac{C_1+D_1}{2}, \frac{C_2+D_2}{2}, ..., \frac{C_n+D_n}{2}$. The distance between each of the n features of relevant samples to mean of relevant images and mean of irrelevant images:

$$\sigma_1^+ = \frac{|A_1 - AB_1| + |B_1 - AB_1|}{n}$$

$$\sigma_1^- = \frac{|A_1 - CD_1| + |B_1 - CD_1|}{n}$$

$$\sigma_2^+ = \frac{|A_2 - AB_2| + |B_2 - AB_2|}{n}$$

$$\sigma_2^- = \frac{|A_2 - CD_2| + |B_2 - CD_2|}{n}$$

.....

$$\sigma_n^+ = \frac{|A_n - AB_n| + |B_n - AB_n|}{n}$$

$$\sigma_n^- = \frac{|A_n - CD_n| + |B_n - CD_n|}{n}$$

From above, the smaller σ_i^+ is, and the larger σ_i^- is, the more relevant a feature is. Thus, to find new samples, the more relevant a feature is, the smaller we alter that feature.

The second technique (MyGenerator2) is also implemented based on the importance of image's features. MyGenerator2 finds the range of values where the features are relevant and irrelevant, and sorts them in ascending order. For example, consider six images A through F, each contains of n features. Images A, B, C, and D are relevant, and image E and F are irrelevant. The kth feature will be: A_k^+ B_k^+ C_k^+ D_k^+ E_k^- F_k^-, with $1 \leq k \leq n$. After each feature in the image is sorted, the result of first feature could be: A_k^+ E_k^- B_k^+ C_k^+ F_k^- D_k^+, with $1 \leq k \leq n$. Based on these range, the new samples will then be a random number with three ranges of value. The first range is A_k, the second range is minimum value of B_k and maximum value of C_k, and the third range is D_k.

Other generators use active learning and adaptive resampling [19] in its dispersion algorithm. Active learning is a technique of picking a subset of data, and classifying them by giving them labels of relevance, irrelevance or unknown. Based on this classification, we generate classification model that can label the entire data set. Adaptive resampling is a technique that optimizes the process of classification, so that the classification model is more accurate and precise, and so have a smaller number of possibly misclassify instances.

Support Vector Machine [4] is also one type of powerful generator. It has already been widely used for data classification process, such as speech recognition [32], high-dimensional feature space image classification [5], or text classification [13]. To do the classification, Support Vector Machine first inputs a set of labeled data, and based on those labeled data, it makes a data model. Based on that data model, Support Vector Machine predicts and labels a new set of data [9]. In making a data model, SVM uses hyperplanes to separate the training data, so that each hyperplane marks the limit between classes of data; for binary classification, one side of the hyperplane is of class 1, and the other side of the hyperplane is of class 0. For separable data, Linear Support Vector Machine is used, while for non-separable data, Nonlinear Support Vector Machine is used.

Support Vector Machine maps X dimension original training data into a higher dimension feature space F via a Mercer kernel operator K that satisfies Mercer's condition:

$$f(x) = \sum_{i=1}^{n} \alpha_i K(x_i, x) = w \; \Phi(x)$$

with:

$$w = \sum_{i=1} \alpha_i \Phi(x_i)$$

f(x) then determine the classification process: if f(x) $\geq$ 0 then x = 1, otherwise x = 0.

The two common kernels used are polynomial kernel and radial basis function kernel. Polynomial kernel, $K(u,v) = (u.v + 1)^p$, induces polynomial boundaries of degree p in the original space X. And radial basis function kernel, $K(u,v) = (e^{-\gamma(u-v).(u-v)})$, induces boundaries by placing weighted Gaussians upon key training instances.

Bounded-Constraint Support Vector Machine [18] is a type of Support Vector Machine that extends the solution of Support Vector Machine for large classification and regression problems. It consists of two techniques, which are using bounded-constraint formulation for multi-class classification and regression, and also using Crammer and Singer's formulation [6] for multi-class classification.

Support Vector Machine Active Learning [13, 39] is one of the generators using active learning for retrieving images. It combines Support Vector Machines, which already proven to be successful in real-world learning tasks, and active learning. It is developed as a refinement technique of relevance feedback technique. It grasps users query more quickly by using a usually high-dimensional hyperplanes to differentiate which data are relevant or irrelevant. The active learning part then trains the SVM classifier to classify data from the feedback given to it, and returns the resulting images.

Transductive Support Vector Machine is one of the techniques in optimizing Support Vector Machine technique. This technique [31, 43] is considering unlabeled data in classification process, in addition to relying on labeled training data, to improve the classification accuracy. In Transductive Support Vector Machines, the hyperplane is placed based on both labeled and unlabeled data. Joachims [21] in his paper shows that this can improve the classification process.

Statistical Learning Machine [30, 38] is implemented based on a well-developed statistical decision theory framework. This generator uses learning algorithms that will converge to optimal learning states as the number of learning trials increases. This algorithm will converge faster as the number of trials increases.

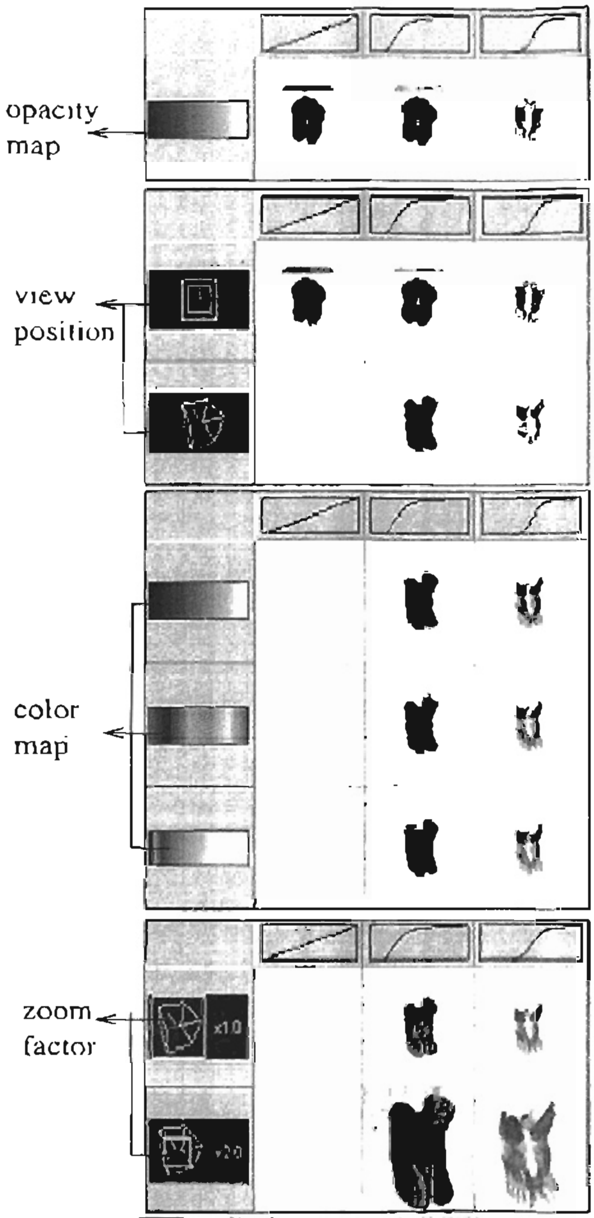

Figure 2.2: A sequence of spreadsheets displaying the visualization of a foot data set. This figure is taken from paper by K. L. Ma and T. J. Kelly [20] page 279 Figure 1.

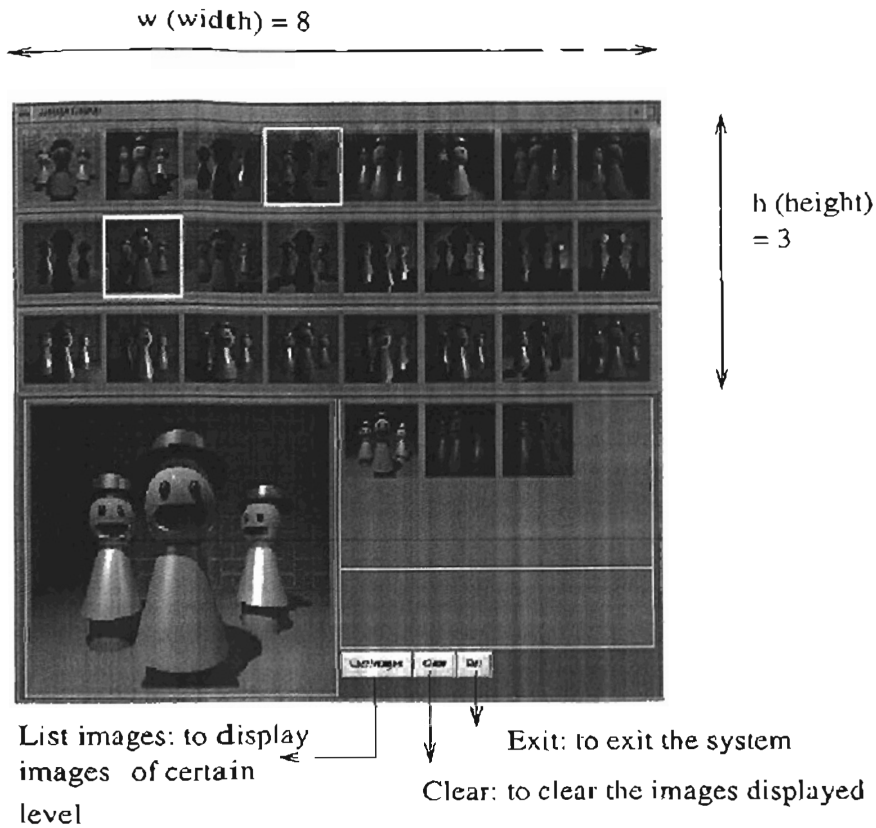

Figure 2.3: A Design Galleries for light selection and placement. This figure is taken from paper by Andalman *et al.* [29] page 397 Figure 9.

Chapter 3

COMPARING AND TESTING THE NAVIGATION ALGORITHMS IN VISUAL DATA EXPLORATION

Many questions arise regarding what are each generators advantages and disadvantage, and in which part are they better or worse than the others. For that, we need a system that can test and compare those generators. It will be difficult for us to test those generators themselves. What we can do is testing and comparing the effects of using those generators in the system, for example: using this particular algorithm in the generator in the system will lower the CPU time of that generator, etc.

When a particular set of data is applied to the system with a particular generator, the Statistic component of the system should record the result of the testing throughout the running of the system, and make a statistic from those results. If we apply that particular set of data to other types of generator, we will have statistic for each of those generators. We can make a table that compares each generators statistic when that particular set of data is applied. By testing the generators with several sets of data, we will have several tables, and also graph if necessary.

There are two methods that we can use to do the testing to the system. The first method is by having the desired image known before the testing is done. Based on that image, the user then has to label the set of images displayed on the screen as relevant, irrelevant, or unknown, until he finds the desired image. The second method is by letting the user directly labels the images on the screen as relevant, irrelevant, or unknown, without having the desired image known beforehand.

We are focusing on the first method in doing our testing to the system, since by having the desired image to be known, it is easier for the user to do the comparison. The user can directly compare the desired image and images on the screen, without possibly being confused by other factors. If we use the second method, there are more human factors that we have to consider, since there is a bigger chance that the user is not consistent in labeling the images. Being inconsistent in labeling the images will confuse the generator in grasping the users query concept, and thus lower the performance of the generator.

The questions that arise in measuring the performance of the generators are:

- How much user interaction needed for each generator?

There are two things that can measure user interaction in the exploration process:

1. Number of time the user needs to find the desired image. By counting the number of set of images have to be displayed to find the desired image, we can determine how much user interaction needed to find the desired image. The bigger the number of time means the worse the generator is.

2. Number of deadends that user has to go through during the exploration process. Deadend means the number of times the user feels that the previous set of images is better than the current set of images. The user then has to click the back button to ignore the current set of images, and continue the exploration process from the previous set of images. This means that the bigger the number of deadends is, the more often a user got confused during the exploration process. Thus, the bigger the number of deadends, the worse the generator is.

— How much CPU time needed from the starting of the system until the image desired is found?

There are three CPU times that we can measure:

1. CPU time of the Generator component of the system, which is the CPU time needed for the algorithm in the generator to compute a new set of input vectors, given feedback that it got from the user.

2. CPU time of the Renderer component of the system, which is the CPU time needed for the Renderer to render images, given an input vector parameters.

3. CPU time of the User Interface component of the system, which is the CPU time needed for the user to label and send feedback to the system, given a set of images.

The CPU time of Renderer and User Interface may not vary for all generators tested, but those values will be useful for comparison. By knowing the CPU time of Generator, Renderer, and User Interface for each generator, we can compare which of those component takes most time to finish, and by how much.

– What is the similarity measure between the resulting images so far with the desired image?

The similarity between the images on the screen and the desired image can be measured using several techniques. In this system, four types of feature are used to measure images' similarity, which are Gabor, Color Histogram, Haralick, and Correlation. All of those features try to measure how similar the current images displayed on the screen compare to the desired image, but they use different techniques to do that:

1. Gabor Similarity Measure

   This technique is defined in these papers [14, 42]. Gabor is originally implemented as a frequency filter, but then also developed for face and character recognition. Nowadays it is already applied to recognize multivariate laser range data [36] and it also applies recursively as recursive Gaussian [15]. It measures the similarity of two images by localizing the direction of spatial frequency at certain angle, and outputting maximallly at those particular edges with that angle orientation. Thus, we can detect the edges at all orientations of an image.

Gabor filter is used to extract local image features. Consider an input image $I(x, y), (x, y) \in \Omega$, with Ω is the set of image points and 2-D Gabor function $g(x, y), (x, y) \in \Omega$, the Gabor feature image r(x,y) is:

$$r(x, y) = \int\int_{\Omega} I(\zeta, \eta) g(x - \zeta, y - \eta) d\zeta d\eta$$

With Gabor function:

$$g_{\lambda,\theta,\varphi}(x, y) = e^{-((x'^2+\gamma^2 y'^2)/2\sigma^2)} cos(2\Pi \frac{x'}{\lambda} + \varphi)$$

where $x' = xcos\theta + ysin\theta$, $y' = -xsin\theta + ycos\theta$, $\sigma = 0.56\lambda$, $\gamma = 0.5$

In this thesis, Gabor technique is used to extract the features of images. The similarity between two images is measured by comparing the dot product and the Euclidean distance of two images.

2. Color Histogram Similarity Measure

This technique is defined in these two papers [16, 37]. It measures the similarity of two images by using color histogram for color image indexing. At a given color space, each local color range is represented by one histogram bin. Thus, color histogram represents the coarse color distribution in an image. Two colors are considered identical if and only if they are allocated into the same histogram bin. Thus, no matter how similar two colors look like, if they are allocated into different histogram bin, then they are considered totally different.

Histogram Intersection is a technique that can efficiently match model and image histograms. It overcomes some problems that hinder recognition, which are distractions in the background of the object, viewing object from a variety of viewpoints, and occlusion. Histogram Intersection matches the image color histograms of each of the models. The higher the match value the better the fit to the model. With n buckets each, the normalized Histogram Intersection value of two histograms (two images: I as image and M as model), is:

$$H(I, M) = \frac{\sum_{j=1}^{n} min(I_j, M_j)}{\sum_{j=1}^{n} M_j}$$

And the distance metric (a scaled city-block metric) of the Histogram Intersection, which defines by function 1-H, assuming the histograms are scaled to be the same size, is:

$$1 - H(I, M) = \frac{1}{2T}\sum_{i=1}^{n} |I_i - M_i|$$

where

$$T = \sum_{i=1}^{n} M_i = \sum_{i=1}^{n} I_i$$

Similar to Gabor, Color Histogram is used to extract the features of images. The dot product and Euclidean distance of the images is then compared to measure the similarity.

3. Haralick Similarity Measure

This technique is based on paper by Prof. Robert Haralick [17]. It measures the similarity of two images by using probabilistic measures, which used likelihood that were derived from Bayesian classifier that measures the relevancy of two images. If the likelihoodness between those two images are high, then the two images are similar, and vice versa, if the likelihoodness are low, then the two images are not similar.

The similarity is not computed in a common way by calculating the distance of feature spaces, instead it is computed using joint posterior probability ratios and then taking their weighted combinations. Haralick Similarity Measure uses Bayesian framework that combine multiple measurements on images. In binary classification, if there are n classifiers with measurement vectors x1, ..., xn, then the equation for Bayesian classifier is:

$$assign(\zeta_i, \zeta_j) to\ arg\ max_{c \in A,B} p(c|x_1, \ldots, x_n)$$

and assuming equal priors and conditional independence, the Bayesian classifier is:

- Product rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B} \prod_{i=1}^{n} p(c|x_i)$
- Sum rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B} \sum_{i=1}^{n} p(c|x_i)$
- Max rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B}\ max_{i=1}^{n} p(c|x_i)$
- Min rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B}\ min_{i=1}^{n} p(c|x_i)$
- Median rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B}\ median_{i=1}^{n} p(c|x_i)$
- Majority rule: $assign(\zeta_i, \zeta_j)\ to\ arg\ max_{c\in A,B}\ \sharp i | p(c|x_i) > 0.5, i = 1, ..., n$

with p(c—xi) is the posterior probability given by the classifier i under class c. In this thesis, Haralick technique is used to extract the features of images. After the features are extracted, the similarity between the two images is calculated by both dot product and Euclidean distance.

4. Correlation Similarity Measure

This technique uses correlation to measure the similarity between two images. To measure the similarity between image A and B, where both images A and B have r rows and c columns, with pixels of A: $a_1 1$, $a_1 2$, ..., $a_1 c$, ..., $a_r c$, and pixels of B: $b_1 1$, $b_1 2$, ..., $b_1 c$, ..., $b_r c$, then the Correlation similarity measure will be:

$$A \bullet B =$$

$$a_1 1 * b_1 1 + a_1 2 * b_1 2 + \ldots + a_1 c * b_1 c + \ldots + a_r c * b_r c$$

with $a_x y$ is a normalized pixel·

$$a_x y = \frac{the\ RGB\ value\ of\ pixel\ a}{total\ RGB\ value}$$

As the two images compared are getting more similar to each other, the similarity values should be getting bigger.

For each of those measurements of performance, we have a table and a corresponding graph associated to it. The complete table and graph results are attached in the Appendix B, C, and D.

Chapter 4

EXPERIMENT

A modular and reliable system is built to test and compare the generators. The architecture of the system has to be arranged so that the testing procedure can be done as flexible as possible. The system has to be made as independent as possible from any parameter, so that we can compare the results accurately. In this section, we will first describe the architecture of the system and define how we are going to use this system to do the testing and comparison (4.1), and then discuss the experimental results (4.2).

4.1 The Architecture of the System

Figure 4.1 shows us the screenshot of the system. The interface displays twenty images at a time. Those images can be clicked; not clicking the image makes the status of the image unknown (signify by the green border around the image). Right clicking makes the status of the image relevant (signify by the blue border around the image), and left clicking makes the status of the image irrelevant (signify by the red border around the image).

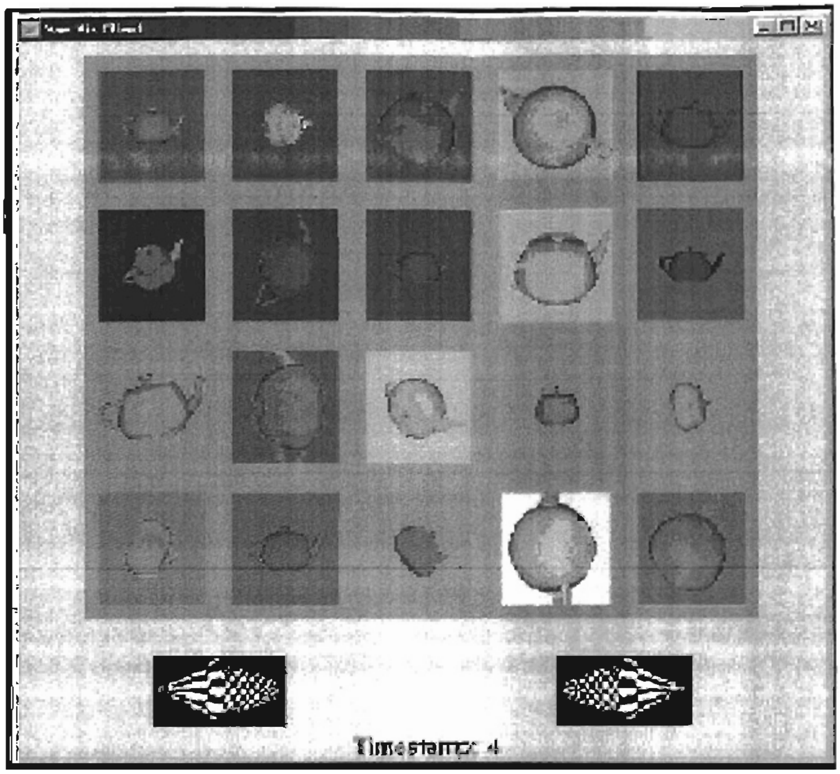

Figure 4.1: The screenshot of the system

The Timestamp on the bottom of the screen shows which set of images set that has been displayed so far; the first set of images is of timestamp 0, the next one is 1, and so on. There are two buttons on the upper side of the Timestamp, which are the Next and Back buttons. When the Next button is clicked, depending on the type of generator used, another set of twenty images is generated. Those images can be clicked again: once, twice, or not clicking at all. The process continues until the desired image is found, and the user quit the system.

Network is used for this system, so that future experiments on distributed, collaborative visualization is possible. Therefore the interface has to differentiate when the system is in the idle state when it is waiting for a feedback from the current set of images, which is when the Next or Back button is not yet clicked, or when it is at a waiting state, which is when one of the button is already clicked and the system is trying to display a set of images.

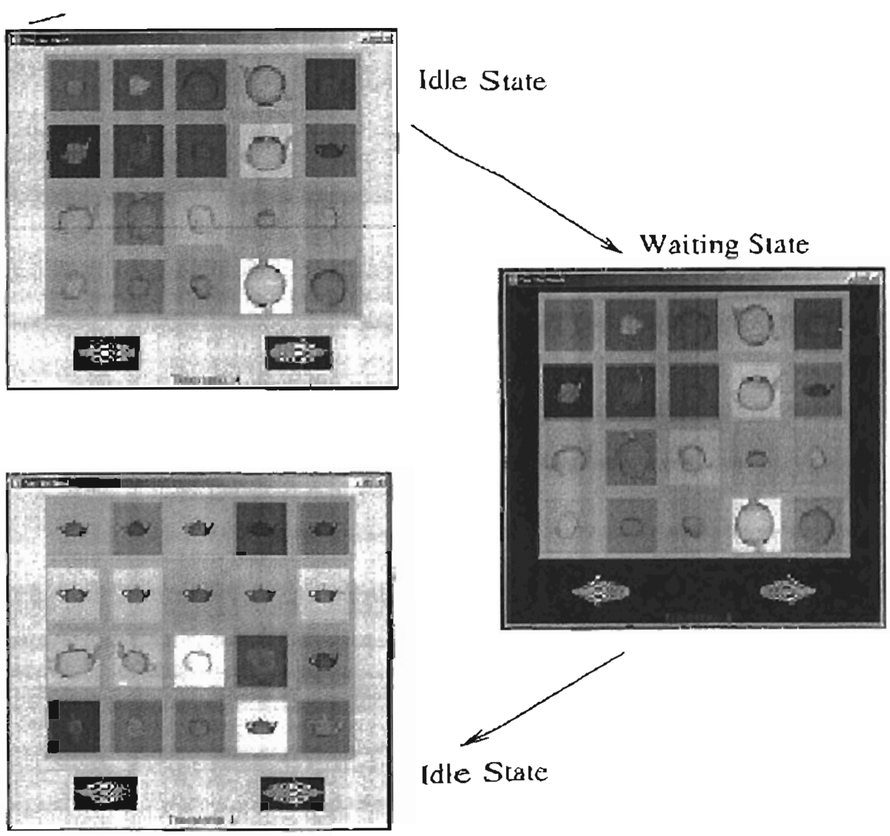

Figure 4.2: The transition between the displays of images

On the idle state, the color of the background of the screen is gray. Otherwise, on the waiting state, the color of the background turns black, and turns back to gray again after the waiting state is finished. On the waiting state, no button should be clicked, since the set of images that will be displayed will be skipped. The next set of images is then calculated based on the skipped set of images instead, and be displayed next. Figure 4.2 shows this state change.

The system consists of six main components, which are Generator, Renderer, Control, History, Statistic, and User Interface. Each of those parts has an independent individual task.

From Figure 4.3, we can see that Control organizes the components of the system. Control connects other parts of the system and controls the run of the system. Control gives input parameters to other parts in the system, and they reports the results back to Control, waiting for Control to pass another input parameters. For example, Control gives Generator (Figure 4.4) a training data, in the form of input parameter vectors, and also previous set of images labels, which is a feedback of the previous set of images from the user. Generator is then outputting a certain number of input parameter vectors based on the two inputs that are given to it. The output of this generator is reported back to Control. The number of training data inputted and outputted depends on the generators setting. Different generators are using different algorithms.

When the system is run for the first time, generator generates a set of random

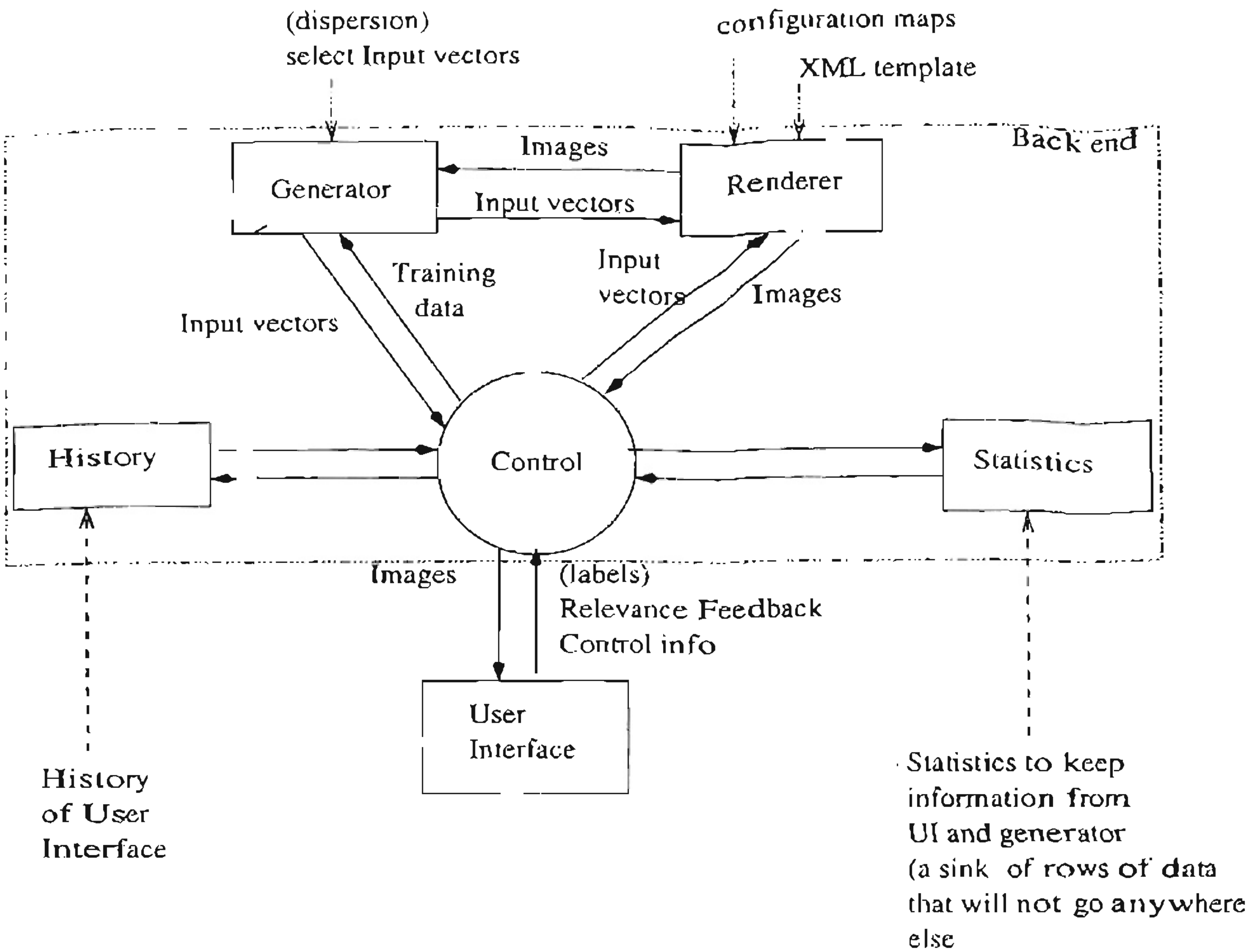

Figure 4.3: Diagram of the system

input parameter vectors. Those first input parameter vectors outputted by the generator are to be generated as dispersed as possible, so that choices of lights are vary. After that, Generator receives input vector from Control, and generate a set a light based on the input vector given.

Control and Generator gives Renderer input vector. Input vector given are of the range 0.0 to 1.0. so that the images compared are not distorted by one of the

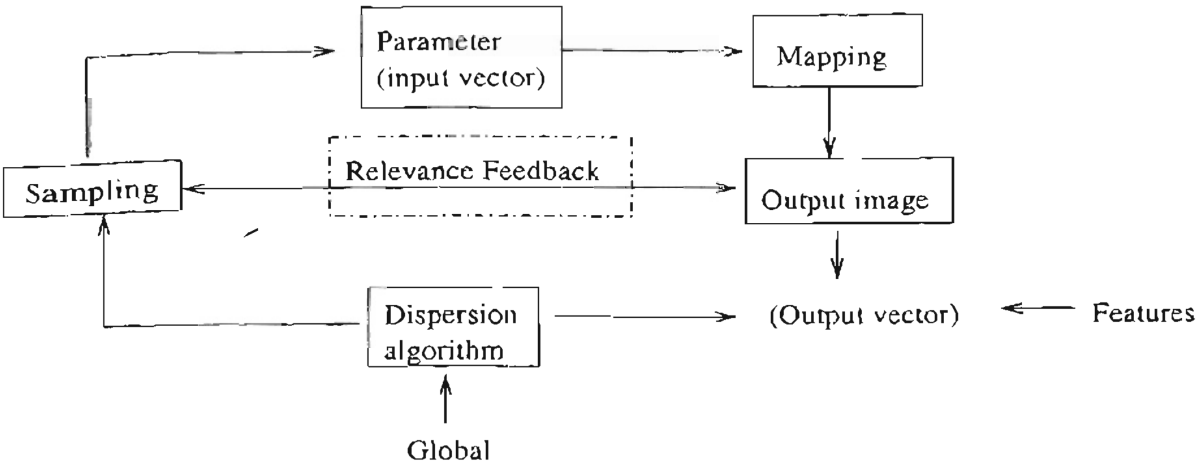

Figure 4.4: Diagram of the Generator

input parameters. Renderer part consists of three other parts, which are Functional Object Mapping, Keyword Substitution, and XML Renderer, as shown in Figure 4.5.

Functional Object Mapping consists of many conversion functions. Functional Object Mapping maps input vector from value range of 0.0 to 1.0 to other value ranges, based on what the conversions are. All of the information of what the input vectors are (object sizes, cameras distance, etc) and what conversions to be used for each of them are kept in server input file, server.rc, under keyword parameter list (Figure 4.5). By reading from the input file, Functional Object Mapping knows what the input vectors are and what conversion to use. After converting the input vector ranges, it passes the result to Keyword Substitution.

Keyword Substitution substitutes the keyword used in XML template with actual values passed by Functional Object Mapping (Figure 4.6 and 4.7). Keyword Substitution knows what the input vectors are from the input file. It then reads from

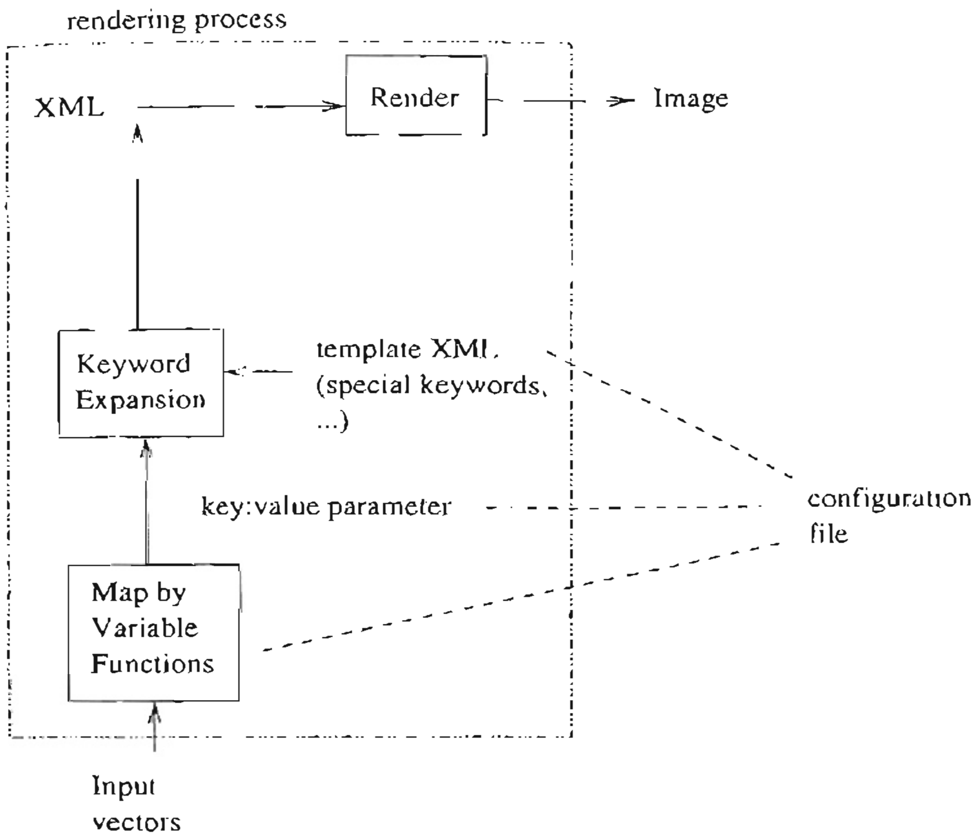

Figure 4.5: Diagram of the Renderer

XML template and match the keyword used for each input parameter, and substitute it with the actual value.

XML Renderer is the last part of Renderer. XML Renderer is the one who actually generates images using XML Parser. XML Parser maps the values in XML template to actual OpenGL codes and creates the image, and pass the image back to Control.

User Interface is connected to Control through network. With this network, many Users can access this system at the same time. A fast machine may render

```
<Thesis>
<View>
   <Camera cameraV = "80.0 1 0.2 800.0" >
   </Camera>
</View>
<Scene>
   <DesiredImage desiredIm = "desiredIm.ppm" />
   <Material face = "front" type = "diffuse" values = "1 1 1 1"/>
   <FogColor fogColorV = "%(FogColor)s"/>
   <Fog fogV = "%(FogInfo)s"/>
   <LightSource name = "0">
      <Light pname = "ambient" value = "%(LightAmbiXYZA)s"/>
      <Light pname = "diffuse" value = "%(LightDiffXYZA)s"/>
      <Light pname = "specular" value = "%(LightSpecXYZA)s"/>
      <Light pname = "position" value = "%(LightPosXYZA)s"/>
   </LightSource>
   <LightModel pname = "modelTwoSide" value = "true"/>
   <PlaceObject>
      <Translate transV = "0.0 0.0 -350.0"/>
      <Rotate rotateV = "%(RotateAXYZ1)s"/>
      <Translate transV = "-120.0 0.0 30.0"/>
      <Color colorV = "%(ColorTeapotRGB)s"/>
      <GraphicsObject>
         <Teapot size = "150"/>
      </GraphicsObject>
      <Translate transV = "180.0 0.0 130.0"/>
      <Color colorV = "%(ColorCubeRGB)s"/>
      <GraphicsObject>
         <Cube size = "120"/>
      </GraphicsObject>
      <Translate transV = "50.0 0.0 -300"/>
      <Color colorV = "%(ColorSphereRGB)s"/>
      <GraphicsObject>
         <Sphere sphereInfo = "120 100 100"/>
      </GraphicsObject>
   </PlaceObject>
</Scene>
</Thesis>
```

Figure 4.6: XML template before substitution

```
<Thesis>
<View>
  <Camera cameraV = "80.0 1 0.2 800.0" >
  </Camera>
</View>
<Scene>
  <DesiredImage desiredIm = "desiredIm.ppm" />
  <Material face = "front" type = "diffuse" values = "1 1 1 1"/>
  <FogColor fogColorV = "0.270674 0.560238 1.92013e-308 0"/>
  <Fog fogV = "1.26854 4.54831 "/>
  <LightSource name = "0">
    <Light pname = "ambient" value = "0 0 0 0"/>
    <Light pname = "diffuse" value = "0 0 0 0"/>
    <Light pname = "specular" value = "1.92039e-308 0 0 0 "/>
    <Light pname = "position" value = "-100 -100 -100 -100"/>
  </LightSource>
  <LightModel pname = "modelTwoSide" value = "true"/>
  <PlaceObject>
    <Translate transV = "0.0 0.0 -350.0"/>
    <Rotate rotateV = "-180 0 0 0"/>
    <Translate transV = "-120.0 0.0 30.0"/>
    <Color colorV = "0 0 0"/>
    <GraphicsObject>
      <Teapot size = "150"/>
    </GraphicsObject>
    <Translate transV = "180.0 0.0 130.0" />
    <Color colorV = "0 0 0"/>
    <GraphicsObject>
      <Cube size = "120"/>
    </GraphicsObject>
    <Translate transV = "50.0 0.0 -300"/>
    <Color colorV = "1 0 0"/>
    <GraphicsObject>
      <Sphere sphereInfo = "120 100 100" />
    </GraphicsObject>
  </PlaceObject>
</Scene>
</Thesis>
```

Figure 4.7: XML template after substitution

images, for display anywhere. A simple extension would allow multiple machines to be used for rendering. This can make the exploration process much faster, because feedbacks from images arrive more frequently.

Control passes the images that it received from Renderer to User Interface. At the same time, those images parameter are also passed to History. User Interface is then labeling the images to be relevant, irrelevant, and unknown, and then click Next or Back button. When the User clicks Back or Next button, control is given back to Control.

If Next button is clicked, Control passes those images parameter and label to Generator, and passes some data to Statistic. Generator then makes a new set of input parameters based on the input given. These are then be passed to Control and Renderer. New set of images is generated from Renderer to be passed by Control to User Interface. User Interface then repeats the same procedure: marks the images to be relevant, irrelevant, and unknown, and pass it back to Control, etc. If Back button is clicked, Control calls History and tell it to return the input parameters that correspond to a set of images before the current images.

The History component encapsulates a data structure that holds the entire set of images and their associated information. History keeps track of the input parameter used to generate each image. It also keeps track which images are relevant, irrelevant, and unknown. If Next button is clicked, History is adding one more set of input parameters to the list. If Back button is clicked, History moves its current position one back and return the set of input parameters correspond to the previous set of images.

The Statistic component will store all the testing results that are measured while the system is running. The system will be run several times, each time using a different generator. And in each run, that particular generator will be tested with several different test data sets. Statistic component will record all of those testing results and make a statistic from those results. These statistics will be used for comparing those generators. We will discuss what and how the testing will be done in the next section.

Figure 4.8 shows us the diagram of the system from file structure point of view. As we can see from the diagram, visclient and visserver has their own resource file, which are client.rc (Figure 4.9) and server.rc (Figure 4.10). client.rc defines the servers name and port number, and also the window width and height, while server.rc defines the clients port number, xml template used, parameter list, and mapping functions used for each parameter name.

The words on the bottom right of the boxes are the name of the namespaces under which the files (folders) are belong. visclient and visserver is where the connected ports defined. Then it goes through ServerFacade and ClientFacade, which do not provide the actual services. They are only the interfaces that pass the information to the backend renderer. Net is the actual implementation of the network, while control controls the backend parts and sends back the result through Net, to at the end displayed through visclient.

Visserver, visclient, history, and control are an independent file, while ServerFacade, Net, KeywordSubstitution, Generator, XMLRenderer, GUIClient, and ImageUtils are folders.

ServerFacade folder contains ServerFacade and ClientFacade files. They are interfaces that pass information to backend renderer. Net contains netclient, netserver, and communicationSpecs files. They are the actual implementation of the network from client to server and vice versa.

KeywordSubstitution contains KeywordExpander file. It changes the keywords used in XML template to the actual values that are generated by the Generator. Generator contains all types of generators that are tested and compared by the system. Each of the generators generates input parameter vectors in its own way.

XMLRenderer contains camera, ElementFunctions, FuncObjMap, VectorToImage, XMLParser, and all other files needed for parsing and generating images. GUIClient contains display, keyboard, mouse, reshape, GUIutil, guiDataStructures, and all other files needed for establishing connection for user interaction with the system. ImageUtils contains simpleppm and imageutils files, which convert images to certain format of file (ppm or something else), and also contains image tools such as resizing and so on.

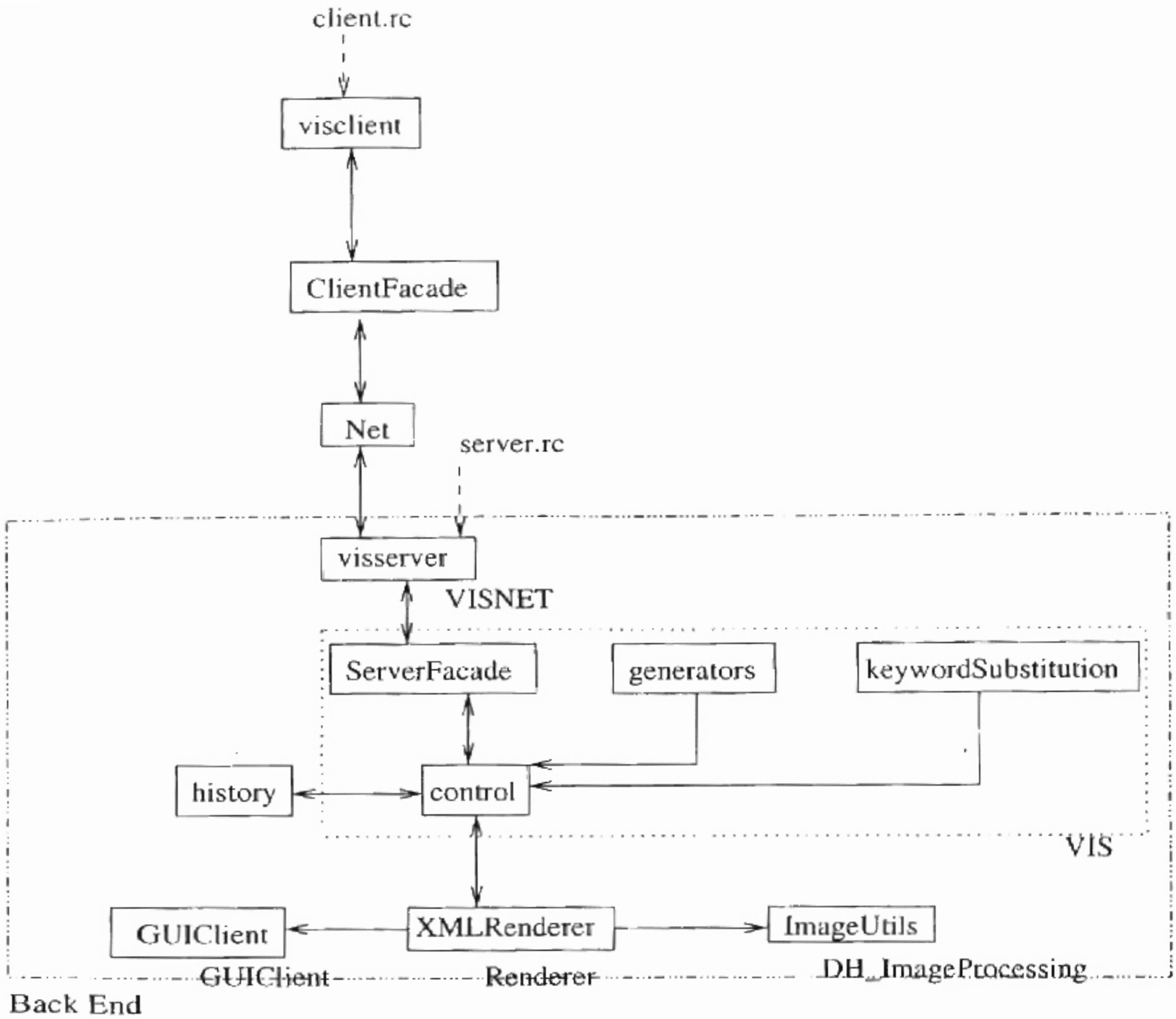

Figure 4.8: Diagram of the Systems File Structure

```
*    # configuration file for visualization navigation client,      *
*    # visclient                                                      *
*    server host name = localhost                                     *
*    server port = 7171                                               *
*    initial window width = 600                                       *
*    initial window height = 600                                      *
*_____________________________________________________________________*
```

Figure 4.9: Resource file from client side: client.rc

```
# configuration file for visualization navigation server,
# visserver
server port = 7171

# configuration for XMLRenderer

#configuration file for parameter name list and its accociated
#functional object and input vector indices
xml template file = template2
generator = RandomGenerator
parameter list = dPan dTilt dZoom dMove dMouse CameraOrtho FogInfo FogColor
MatDiffXYZA LightSrcName LightAmbiXYZA LightDiffXYZA LightSpecXYZA
LightPosXYZA RotateAXYZ1 ColorTeapotRGB TeapotSize RotateAXYZ2
ColorCubeRGB CubeSize ColorSphereRGB
dPan FnObj = DeltaMoveOneOne
dTilt FnObj = DeltaMoveOneOne
dZoom FnObj = DeltaMoveOneOne
dMove FnObj = DeltaMoveOneOne
dMouse FnObj = IdentityOneOne
CameraOrtho FnObj = Linear6Param
FogInfo FnObj = Fog2Param
FogColor FnObj = Identity4Param
MatDiffXYZA FnObj = Identity4Param
LightSrcName FnObj = IdentityOneOne
LightAmbiXYZA FnObj = Identity4Param
LightDiffXYZA FnObj = Identity4Param
LightSpecXYZA FnObj = Identity4Param
LightPosXYZA FnObj = Linear4Param
RotateAXYZ1 FnObj = Rotate4Param
ColorTeapotRGB FnObj = Identity3Param
TeapotSize FnObj = ObjectSize
RotateAXYZ2 FnObj = Rotate4Param
ColorCubeRGB FnObj = Identity3Param
CubeSize FnObj = ObjectSize
ColorSphereRGB FnObj = Identity3Param
```

Figure 4.10: Resource file from server side: server.rc

4.2 The Result and Discussion of the Experiments

As what we have been discussed in Chapter III, Comparing and Testing Navigation Algorithms in Visual Data Exploration, there are a couple of experiments that we had performed to compare the generators. The system implemented is a modular system that especially designed to do these experiments. In this section. we will discuss how to do those experiments using the system, and then discuss the result of the experiment.

As we have discussed before, there are two methods that we can use to do the measurement. The first one is by knowing the desired image before the system starts. The second one is by trusting the user to guide the system until the desired image is found. In this experiment, we did only the first method for our measurements. It is more trustable, because human factor is not as big as the second method. For future work, the second method can be done too, to see how human factor influence the experimental results.

The experiment is done using seven generators, which are: Random generator, Peng generator, PFRL, SVMLight, SVM-Peng generator, Transductive SVM (TransSVM), and BSVM. In the experiment, Random generator generates new sample set by randomly picking values from range 0.0 to 1.0. Peng generator, based on the user feedback, generates a number of samples around the positive samples. It then picks the most disperse samples among the samples to be the new sample set. PFRL generates a number of input vectors and generates images from those vectors.

It then picks images with closest Gabor distance as the new sample set. SVMLight generates a number of samples by applying MyGenerator1, and generates a new set of images from those samples by using SVM Light. It picks the most disperse samples to get the new sample set. SVM-Peng generator combines Peng generator with BSVM in generating new sample set. TransSVM generates a number of samples by applying MyGenerator1, and generates a new set of images from those samples using Transductive SVM. BSVM generates new sample set by applying MyGenerator2 and BSVM.

Each of those generators is tested with several datasets, which are: OpenGL Object (3 Object: Teapot, Cube, and Sphere), Real Object (Al, Dolphin, F16, Flower, Porsche, Soccer Ball, and Vase), and Scientific Data (electron density of Natrium).

In this section, we will discuss the result of the experiment based on how much user interaction needed, number of deadends, CPU time, and similarity features.

4.2.1 User Interaction

There are two things calculated to measure user interaction needed by each generator, which are the average time needed to find the desired image and the number of deadends.

Data Set	Generator						
	Random	*Peng*	*PFRL*	*SVMLight*	*SVM-Peng*	*TransSVM*	*BSVM*
Real Obj	13	7	4	4	5	4	5
OpenGL Obj	12	5	3	3	6	5	3
Scientific	16	7	4	5	5	4	4

Table 4.1: Average time (number of set of images) needed for Real Object, OpenGL Object, and Scientific data set to find the desired image.

Data Set	Generator						
	Random	*Peng*	*PFRL*	*SVMLight*	*SVM-Peng*	*TransSVM*	*BSVM*
Real Obj	0.09	0.25	0.03	0.02	0.12	0.08	0.12
OpenGL Obj	0.08	0.20	0.00	0.00	0.50	0.20	0.00
Scientific Data	0.06	0.29	0.00	0.00	0.00	0.00	0.00

Table 4.2: Average number of deadends of Real Object, OpenGl Object, and Scientific data set as time increases for all of the generators tested.

Time needed to find desired image

From Table 4.1 we can see that when testing Real object, Random generator needs the most time to find the desired image, while PFRL, SVMLight, and TransSVM needs the least time. When OpenGL Object data set is tested, Random generator needs the most time to find the desired image, while PFRL, SVMLight, and BSVM needs the least time. When Scientific data set is tested, Random generator needs the most time to find the desired image, while PFRL, TransSVM, and BSVM needs the least time. Thus, we can conclude that Random and BSVM generators need the most and least time to find the desired image no matter what the test data set type is.

Deadends

Tables and graphs in Appendix B show the number of deadends of each generator when tested with different test data sets, and in which timestamp it happens. From Table 4.2, the average number of deadends/time between generators can be compared. The bigger the number of deadends/time, the more the user had to back to previous set of images and started over from there. That means the bigger the number of deadends/time, the worse the generator is. Table 4.2 shows that for all Real Object, OpenGL Object, and Scientific data object, Peng has the smallest average number of image clicks/time. For Real Object and Scientific data, Peng has the biggest average number of deadends/time. For OpenGL Object,Peng and TransSVM have the biggest average number of deadends/time.

4.2.2 CPU Time

To measure the CPU time of the Generator, Renderer, and User Interface components, we use the wall system clock to time them. The system clock resides in the Statistic component, where all the measurements and the results also reside. To measure CPU time of a Generator, the clock system records the time when Control passes training data and labels to the Generator. And when the Generator passes back the resulting input parameter vector to Control, the clock system records the time again. The CPU time of the Generator is then the difference between those two times recorded.

Data Set	Generator (milisecond)							
		Random	*Peng*	*PFRL*	*SVMLight*	*SVM-Peng*	*TransSVM*	*BSVM*
Real Obj	Generator	0.0789	1.0073	493.3000	10.6905	11.2441	9.1556	75.9091
	Renderer	145.2071	153.5455	214.2179	214.6727	194.7584	200.3657	175.7211
	UI	0.3953	0.3852	0.4679	0.5476	0.5143	0.4957	0.4544
OpenGL Obj	Generator	0.0001	1.4000	491.6670	12.5000	8.2500	11.8000	16.1667
	Renderer	107.6670	114.2000	143.5000	141.8330	94.5000	114.0000	141.6670
	UI	0.4167	0.4000	0.3333	0.5000	0.4167	0.5000	0.5000
Scientific	Generator	0.1250	0.9286	421.8750	11.8000	13.3000	9.6250	16.2500
	Renderer	109.6560	142.7860	203.5000	202.2000	204.5000	204.6250	202.5000
	UI	0.4375	0.5714	0.6250	0.5000	0.4000	0.6250	0.7500

Table 4.3: Generator, Renderer, and UI's CPU time of all Real Object, OpenGL Object, and Scientific Data sets for generators tested

The CPU time of Renderer and User Interface components are measured in the same way.

Table 4.3 shows us the CPU time of all generators when tested with three data set types. When all Real Object, OpenGL Object, and Scientific test data sets are measured, generators with the largest and smallest generator CPU time are PFRL and Random. PFRL has much bigger generator CPU time because each time the generator has to generate a lot of output images, extract the features, and calculate new set of images based on the extracted features. Random basically just randomly generate new input vectors. It does not have to calculate anything else. That is why it takes a very small amount of time to finish.

When Real Object is measured, generators with the largest and smallest renderer CPU time are SVMLight and Random. When OpenGL Object is measured, they are PFRL and SVM-Peng. When Scientific Data is measured, they are TransSVM and Random.

The bigger the UI CPU time means the more users have to think when labeling the images. This means the generator is not very informative or confusing. When Real Object is measured, generators with the largest and smallest UI CPU time are SVMLight and Peng. When OpenGL Object is measured, they are both TransSVM and BSVM, and PFRL. When Scientific Data is measured, they are BSVM and SVM-Peng.

4.2.3 Similarity measure

Similarity measure is calculated using two methods. The first method is by calculating the Euclidean distance between the two images. The smaller the distance between the two images, the more similar the two images are, and vice versa. Thus, as time increases, the distance of the two images should be getting smaller and smaller. The second method is by calculating the dot product between the two images. This method calculates the similarity value between two images. Thus, the bigger the dot product value between two images, the more similar the two images are.

To define each generator's performance, for each similarity measure technique used, maximum, average, and minimum similarity measure values are calculated. Maximum, average, and minimum similarity measure values are the maximum, average, and minimum similarity values among a set of images compare to the image that we want to generate.

The discussion of the result will consider two factors. The first one is the performance of each generator as the time increases. This is examined by the tables and graphs on Appendix C. Appendix C has the complete tables and graphs of all maximum, average, and minimum distance and similarity value of all test data sets when measured using all four features as time increases. As the time increases, the set of images generated should have smaller and smaller distance to the desired image.

The second factor is the robustness of the generators, which examined by the tables and graphs on Appendix D. Appendix D has the complete tables and graphs of all maximum, average, and minimum distance and similarity value of all test data sets when measured using all four features. Since it is always possible to construct situations that favor a particular generator over all the others, the issue becomes one of robustness. For each feature of a sample file of a particular data set types, the average of the first three timestamps of maximum, average, and minimum distance tables of each generator are calculated. The distance rate d_m and the distribution (upper and lower quartiles) of each generator's maximum, average, and minimum Euclidean distance can then be calculated from the sample files' maximum, average, and minimum average values calculated above. The similarity rate of each generator is calculated using similar method.

The robustness issue [7, 33] can be captured by computing distance and similarity ratio. The ratio r_m of its distance rate d_m and the smallest distance rate in a particular example: $r_m = \frac{d_m}{min_{1 \le k \le 7} d_k}$. The ratio r_m of its similarity rate s_m and the biggest similarity rate in a particular example: $r_m = \frac{s_m}{max_{1 \le k \le 7} s_k}$. Thus, the best generator m^* for that example will have $d_m = 1$, and all other generators have larger values $d_m \geq 1_{m \neq m^*}$. Equivalently, it will have $s_m = 1$, and all other generators have smaller values $s_m \leq 1_{m \neq m^*}$. The larger the value of d_m (the smaller s_m) the worse performance of the mth generator is for that example. The distribution of d_m values for each generator over all the problems therefore seems to be a good indicator of robustness. The graphs generated plot a distribution of the distance and similarity rate for each generator. Each has maximum and minimum value, and box that marks the range between upper and lower quartiles, and horizontal line between them that marks the median.

As mentioned above, three test data set types are used in measuring the similarity measure, which are Real Object, OpenGL Object, and Scientific Data. Below we will discuss each of them, with different similarity measure techniques used.

Real Object

Tables and graphs on Appendix C show the generators' performance as the time increases. When all Gabor, Color Histogram, Haralick, and Correlation are used, both PFRL and BSVM are mostly able to generate image with the smaller and smaller minimum distance to the desired image. Only PFRL that is able to generate set of images that have constantly smaller and smaller average and maximum distance than the previous set of images.

Figure 4.11(a) examines the robustness of the maximum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. Among all generators, TransSVM is the most robust generator. It has the best median performance (1.33), and also the narrowest interquartile range. In half of the problem, its distance rate is no more than 22% than the best case. In 3/4 of the problem it is mo more than 33%. And it is 46% in the worst case. PFRL has similar but slightly worse median and interquartile range performance compare to TransSVM. Peng, SVMLight, and TransSVM have average median performance and interquartile range. SVM-Peng has also similar performance to those three generators, but it has the widest interquartile range. Random has the worst distribution, where the corresponding numbers are 1.55, 43%, 50%, and 66%.

From Figure 4.11(b), we can examine how well a particular generator performs on average over all other generators when Gabor, Color Histogram, Haralick, and Correlation features are used. In this particular problem, both TransSVM and PFRL are the most robust generators. TransSVM has among the best interquartile range, but average median performance (1.30). On the other hand, PFRL has the best median performance (1.28), but slightly worse interquartile range compare to TransSVM. In half of the problem, TransSVM has 29% worse distance rate compare to the best case. In 3/4 of the problem and the worst case, they are 51% and 73%. The corresponding numbers for PFRL are 27%, 52%, and 74%. Other generators

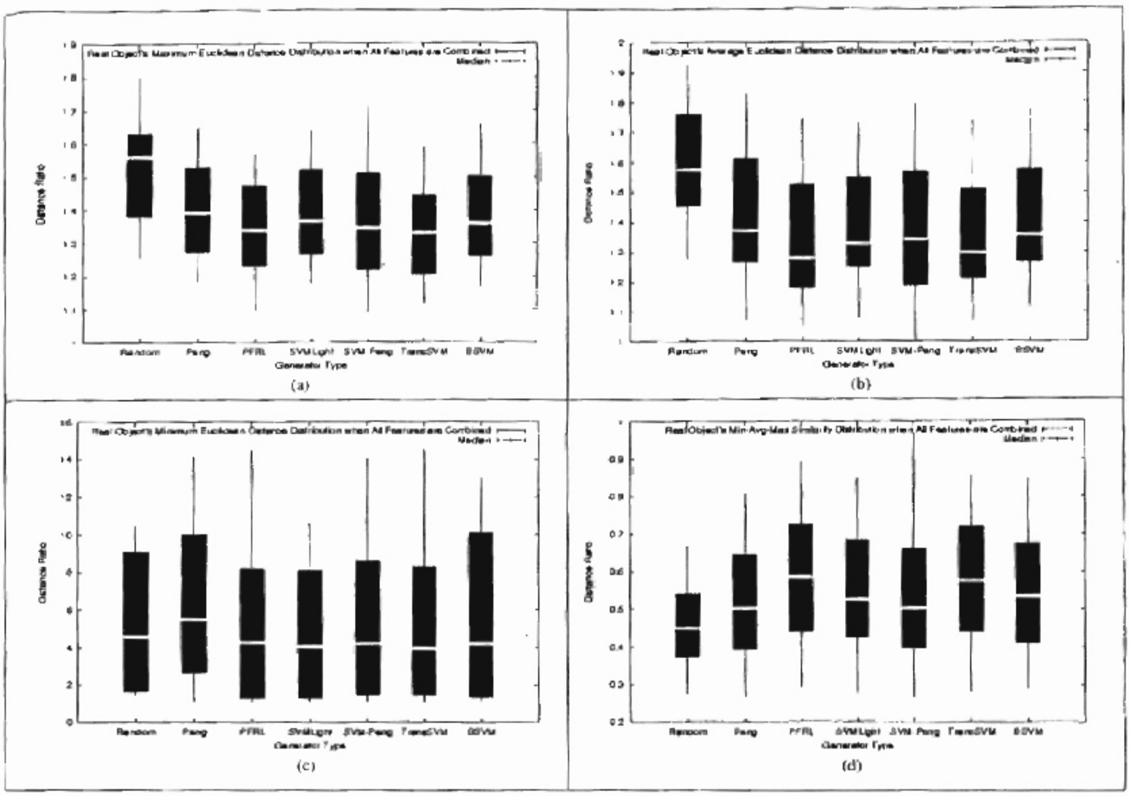

Figure 4.11: (a)-(c) Maximum, average, and minimum Euclidean distance ratio (r_m) distribution for Real Object data set with Gabor, Color Histogram, Haralick, and Correlation features combined. (d) Combination of Maximum, Average, and Minimum similarity value distribution for Real Object data set with Gabor, Color Histogram, Haralick, and Correlation features combined.

have much higher median value and average interquartile ranges. Generator with the widest interquartile range is SVM-Peng. Random is the generator with the worst distribution, where the corresponding numbers are 1.58, 57%, 75%, and 92%.

From Figure 4.11(c), the robustness of the minimum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features can be determined. For this particular problem, both TransSVM and SVMLight are considerably the most robust generators. TransSVM has the best median performance (3.67), and among the best interquartile range. SVMLight has the narrowest interquartile range, but slightly worse median performance (3.84). In half of the problem, TransSVM has 252% higher distance rate than the best case. In 3/4 of the problem and the worst case, they are 694% and 1294%. The corresponding numbers for SVMLight are 268%, 678%, and 922%. BSVM has the widest interquartile range, while Peng has the worst median value. All other generators have average median performance and interquartile range. Among all generators, TransSVM has average interquartile range, the best in median, half, 3/4 of the problem and worst case performance.

Figure 4.11(d) examined the robustness of the similarity distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. In this case, it seems like the generators with best median performance have among the worst interquartile range, and vice versa. PFRL and TransSVM have among the best median performance, but their interquartile ranges are among the worst. On the other hand, Peng and SVM-Peng have among the worst median performance, but their interquartile ranges are among the best. SVMLight and BSVM have average median performance and interquartile range, while Random has the worst distribution of all, with 0.45 median, 117%, 160%, and 253% higher similarity rate in half, 3/4, and worst case of the problem. If we look at the graph, the interquartile ranges of most generators are almost the same. The difference between the best and the worst interquartile range in this particular problem is not extreme. Thus, if interquartile range performance is ignored, PFRL is the most robust generator, with corresponding numbers 0.58, 69%, 121%, and 231%. If interquartile range performance is essential, then SVMLight is the most robust generator, with corresponding numbers 0.52, 87%, 128%, and 250%. SVMLight is the generator with the most consistent performance, even though its performance is not the best one.

OpenGL Object

Tables and graphs on Appendix C show the generators' performance as the time increases. When all Gabor, Color Histogram, Haralick, and Correlation are used, no generator is able to generate image with the smaller and smaller minimum and average distance to the desired image. Only SVM-Peng that is able to generate set of images that have constantly smaller and smaller maximum distance than the previous set of images.

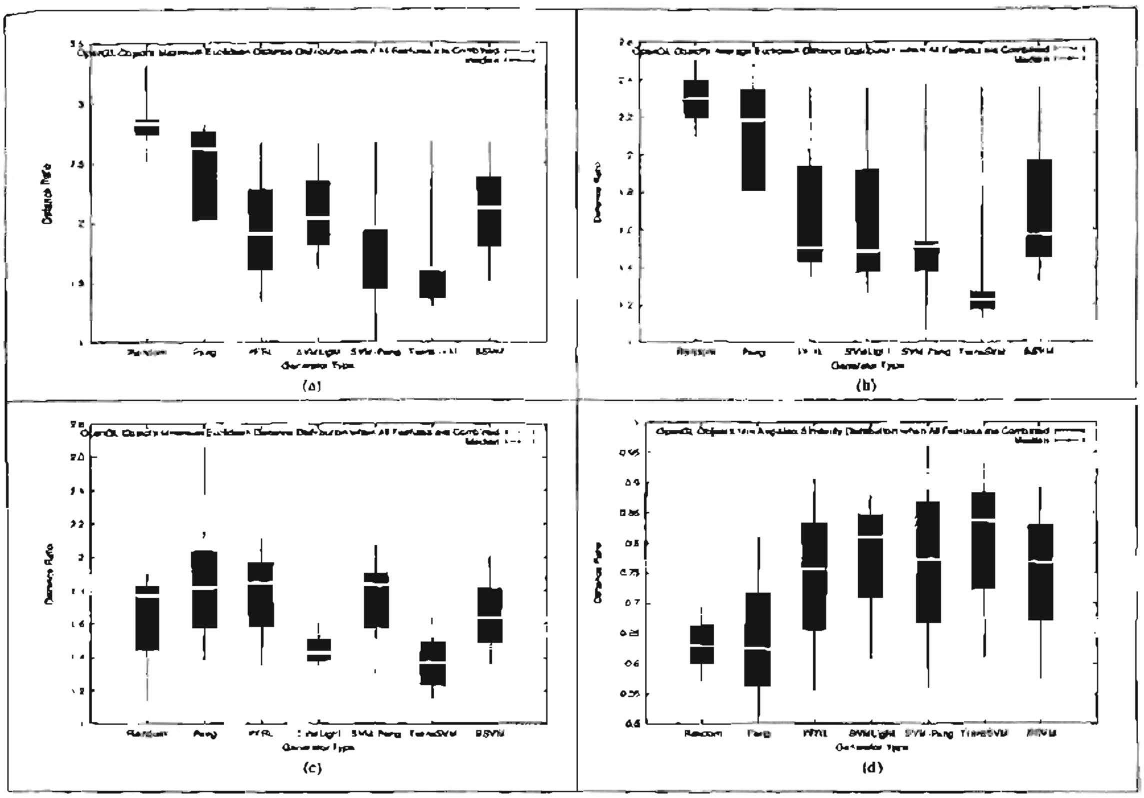

Figure 4.12: (a)-(c) Maximum, average, and minimum Euclidean distance ratio (r_m) distribution for OpenGL Object data set with Gabor, Color Histogram, Haralick, and Correlation features combined. (d) Combination of Maximum, Average, and Minimum similarity value distribution for OpenGL Object data set with Gabor, Color Histogram, Haralick, and Correlation features combined.

From Figure 4.12(a). we can determine the robustness of the maximum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. It is clear from the figure that TransSVM is the most robust generator. It has the best median performance (1.58) and the narrowest interquartile range. In half of the problem, it has 58% higher distance rate compare to the best case. In 3/4 of the problem and the worst case, they are 59% and 166%. Peng has the widest interquartile range, while Random has the worst median performance. Other generators have average interquartile range and median performance. Random has the worst distribution, with corresponding numbers 2.81, 180%, 185%, and 230%. Its distance rates are high in all cases, which means it is at all time performs badly.

Figure 4.12(b) shows us that TransSVM is clearly the most robust generator on average over all other generators when Gabor, Color Histogram, Haralick, and Correlation features are used. It has the best median performance (1.23) and the narrowest interquartile range. In half of the problem, it has only 15% higher distance rate than the best case. In 3/4 of the problem and the best case, they are 19% and 121%. SVM-Peng is the most robust generator after TransSVM. PFRL, SVMLight, and BSVM have similar performance, with average median performance and interquartile range. Random and Peng's distance rates are far above other generators. This means that both Random and Peng performs worst compare to other generators most of the time. Random has the worst distribution with corresponding numbers 2.29, 115%, 125%, and 135%.

From Figure 4.12(c), we can determine the robustness of the minimum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. For this particular case, TransSVM has considerably consistent performance. It has best median performance (1.34) and among the narrowest interquartile range. It has 19% higher distance rate in half of the problem, and 31% and 45% in 3/4 of the problem and the worst case. SVMLight has narrower interquartile range compare to TransSVM, but TransSVM's range has better performance with lower distance rate. SVMLight interquartile range is 1.38-1.51, while TransSVM's is 1.23-1.49. Peng has the widest interquartile range, while PFRL has the worst median performance. Other generators have average median performance and interquartile range.

Figure 4.12(d) examined the robustness of the similarity distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. As we can see from the Figure, the interquartile ranges of most generators tested are almost the same. Among all generators, TransSVM has considerably consistent performance It has the best median performance (0.84) and average interquartile performance. It has 15%, 33%, and 57% higher similarity rate in half, 3/4, and worst case of the problem. SVMLight has narrower performance compare to TransSVM, but its median performance is worse. SVM-Peng has the widest interquartile range, while Peng has the worst median performance. All other generators have average median and interquartile range. Random has the worst distribution with similarity distances far below other generators, which means most of the time it performs worse than other generators. Its corresponding numbers are 0.63, 52%, 60%, 68%.

Scientific Data

Tables and graphs on Appendix C show the generators' performance as the time increases. When all Gabor, Color Histogram, Haralick, and Correlation are used, no generator is able to generate image with the smaller and smaller minimum, average, and maximum distance to the desired image.

Figure 4.13(a) examines the robustness of the maximum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. It this case, TransSVM, the generator with best median performance (1.98), seems to have the widest interquartile range. It has 98%, 107%, and 117% higher distance rate compare to the best case in half, 3/4, and worst case of the problem. SVM-Peng has the second best median performance after TransSVM (2.03), and it has considerably narrow interquartile range. Its corresponding numbers are 103%, 110%, 117%. As we can see from the figure, the interquartile range difference is not much. But, if interquartile range is essential, we can say that SVM-Peng has among the best median performance, and considerably consistent performance in general. If interquartile range is ignored, then TransSVM is

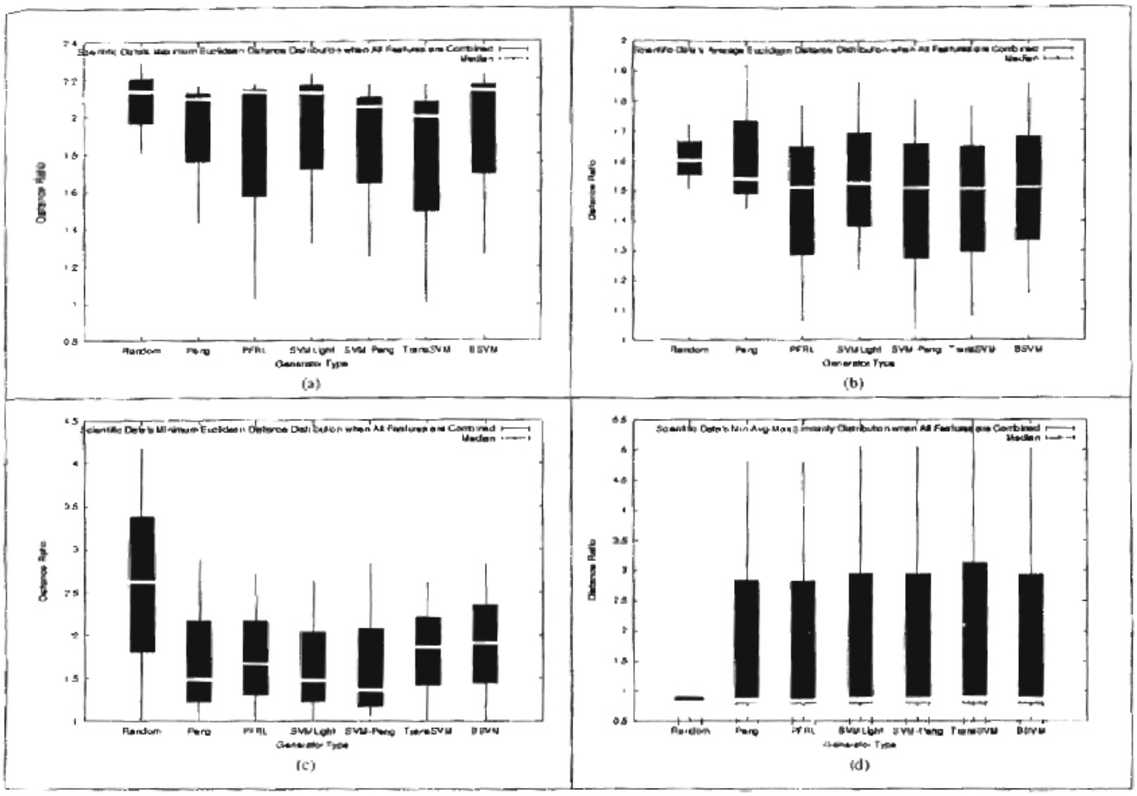

Figure 4.13: (a)-(c) Maximum, average, and minimum Euclidean distance ratio (r_m) distribution for Scientific data set with Gabor, Color Histogram, Haralick, and Correlation features combined. (d) Combination of Maximum, Average, and Minimum similarity value distribution for Scientific data set with Gabor, Color Histogram, Haralick, and Correlation features combined.

the most robust generator. PFRL and Random have the worst median performance. All other generators have average median performance and interquartile range. Random has the worst distribution with corresponding numbers 2.12, 112%, 120%, 129%.

From Figure 4.13(b), we can determine how well a particular generator performs on average over all other generators when Gabor, Color Histogram, Haralick, and Correlation features are used. As we can see clearly from the Figure, all PFRL, SVM-Peng, TransSVM, and BSVM have the same (lowest) median value (1.51). Among those four generators, BSVM has the narrowest interquartile range, but its distance rate distribution is worse than TransSVM. Even though TransSVM has wider interquartile range, it has better performance. Thus, we can conclude that TransSVM is the most robust generator in this case. In half of the problem, it has 46% higher distance rate compare to the best case. In 3/4 of the problem and the worst case, they are 59% and 73%. SVM-Peng has the widest interquartile range, while Random has the worst median performance. All other generators have average median performance and interquartile range. Random is the generator with the worst distribution, with corresponding numbers 1.60, 55%, 61%, 67%. Even though Random has the narrowest interquartile range, but its distance rate is far above other generators, which means it performs badly most of the time.

From Figure 4.13(c), the robustness of the minimum distance distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used can be determined. SVM-Peng has the best median performance (1.33), but among the widest interquartile range. SVMLight has slightly worse median performance (1.44) but among the lowest interquartile range. Thus, we can say that SVMLight has among the best median performance, and considerably consistent performance in general. In half of the problem, it has 44% higher distance rate compare to the best case. In 3/4 of the problem and worst case, they are 104% and 165%. Random has the worst median performance and the widest interquartile range. Its distance rates are far above other generators. It also has the worst distribution, with corresponding numbers 2.59, 159%, 239%, and 317%.

Figure 4.13(d) examined the robustness of the similarity distribution of a particular generator over all other generators when all Gabor, Color Histogram, Haralick, and Correlation features are used. In this case, Peng is the most robust generator. It has the best median performance (0.84) and narrowest interquartile range among all generators but Random. In half of the problem, it has 542% higher similarity rate compare to the best case. In 3/4 of the problem and worst case, they are 578% and 618%. Random has the narrowest interquartile range, but among the worst median performance. In general, it performs worse than other generators most of the time. Its corresponding distribution numbers are 0.83, 554%, 579%, and 606%.

Chapter 5

SUMMARY

Data recognition and classification process is one of the most difficult parts in computer graphics. Many papers and projects have been done to improve the navigation of visualizations process. Many algorithms and intuitive user interfaces have been designed, but no specific system has been developed to test and compare them. The system is a modular system that tests and compares the effects of using each of the generators. Using the system that we developed, we are able to define the advantages and disadvantages of each generator compare to others. The system is built especially to compare all the existing generators in a couple of important aspects. The system is made to be as compatible as possible to do the comparison and testing. All input parameters are inputted from a file (input vector file and XML template file), so that they can be changed easily without changing the system. The system also allows many users to access the system at the same time, to speed up the exploration process.

The system has been used to compare the performance of seven generators, which are Random generator, Peng generator, PFRL, SVMLight, SVM-Peng, TransSVM, and BSVM. Three types of data set are used to test each of these generators, which are Real object, OpenGL object, and Scientific data set.

Two measurements are calculated to measure how much user interactions are needed during the navigation process. They are the time needed to find the desired image and the number of deadends. The experimental result shows that no matter what the data type tested, Random needs the most time to find the desired image, while PFRL needs the least time. The result also shows that generators that contain Peng algorithm in them have the largest number of deadends, while SVMLight has the smallest number. When CPU time is measured, for all data types, PFRL have the largest Generator CPU time, while Random generator has the least.

This thesis discusses in detail the experimental results when all Gabor, Color Histogram, Haralick, and Correlation features are combined. When all features are combined, for Real Object data set, the most robust generators for maximum, average, and minimum Euclidean distance distributions are TransSVM, both TransSVM and PFRL, and both TransSVM and SVMLight. For OpenGL Object data set, the most robust generator for maximum, average, and minimum Euclidean distance distributions is TransSVM. For Scientific data set, the most robust generator for maximum and average Euclidean distance distributions is TransSVM. The most robust generator for minimum Euclidean distance distribution is SVMLight.

For Real Object data set, the most robust generators for maximum, average, and minimum similarity distributions are both TransSVM and PFRL. For OpenGL Object data set, it is TransSVM. For Scientific data set, it is Peng.

The complete experimental results are attached on Appendix B, C, and D. Appendix B contains the tables and figures of user interaction (time needed to find desired image and number of deadends) and CPU time of all generators. Appendix C contains the tables and figures of Euclidean distance and similarity value of all generators as time increases. Appendix D contains the tables and figures of Euclidean distance and similarity value distributions of all generators tested.

Chapter 6

FUTURE WORKS

As we can see from above, the performance of each generator is greatly influenced by the type of data set tested and which similarity measure used. Besides data set type and similarity measure used, there are several factors that can influence the performance of each generator. The system that is built for this thesis has several areas that can be improved in the future.

PFRL has the worst generator and renderer CPU time. This is because PFRL generates a new set of images based on the output features of images. Thus, each time PFRL has to generate a new set of images, it has to generate a number of input vectors, and generate images from those input vectors. Finally it has to extract each image's features, and pick a new set of images based on those features. Instead of generating full size images, thumbnail of images can be generated in the future to reduce the generator CPU time of PFRL.

In BSVM, MyGenerator2 is used to generate new samples that BSVM used to generate a new set of images. In MyGenerator2, for each feature of an image, there are several ranges of value that are used to generate new samples. For example, if there are n features in an image, then feature 1 has k_1 ranges of value, feature 2 has k_2 ranges of value, ... feature n has k_n ranges of value. Thus, to generate a dispersed new samples, each feature's range of value has to be the combination of all other features' range of values, with possible number of new samples generated: $k_1 * k_2 * ... * k_n$. MyGenerator2 does not apply this. Thus, new samples generated by MyGenerator2 may not give the samples that user wanted. This can significantly influenced the performance of the generator tested, which is BSVM. In the future, in order to get a dispersed sample, new samples have to be generated by considering all possible features' ranges as described above.

The system built already calculated the number of mouse clicks/timestamp and image clicks/timestamp of the exploration process. These numbers can also be used to measure generators' performance in the future. For example to examine whether as time increases the user clicks more relevant or irrelevant images. Also whether the user often clicking and unclicking images, which can measure whether the user is often confused by the generator.

There also exist several directions for future research in expanding this comparison system. The system can be designed and put in the web, so that exploration process can take place instant places at the same time. Bender et al. [3] gives us a good reference of the framework of web-based visualization system. The intermediate testing and comparison of dispersion algorithms can also be done in the future, so that we will not only have the final result of the algorithms, but also the resulting images in-between the starting point and the ending point of the algorithms. Kim et al. [24] gives us good reference for this. We can also try to reduce the preprocessing time of the system in displaying images on the screen. Lum et al. [27] do research that can be continued in the future.

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APPENDICES

Appendix A

GLOSSARY

Graphical User Interface	A computer program designed to allow a computer user to interact easily with the computer typically by using a mouse to make choices from menus or groups of icons.
Multidimensional Data	Data that relates to or has more than three dimensions, ot data that has several different aims, qualities, or aspects.
Scientific Visualization	A visualization that concerns with exploring data and information in such a way as to gain understanding and insight into the data. The goal is to promote a deeper level of understanding of the data under investigation and to foster new insight into the underlying process, relying on the humans' powerful ability to visualize.

Timestamp	A device for recording the set of images' numbers that sent out by the navigation algorithm throughout the exploration process.
OpenGL Library	A trademark of Silicon Graphics Inc and is a cross-platform standard for 3D rendering and 3D hardware acceleration first developed in 1992. It is required in some computer games.

Appendix B

USER INTERACTION AND CPU TIME

TABLES AND FIGURES

RAW OBJECT

TIMESTAMP

Time	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	0	2	2
3	3	1	3		1	1	1
4	4	2			2		2
5	5	1					1
6	6	2					2
7	7	1					3
8	8						1
9	9						
10	10						
11	11						
12	12						
13	11						

USER INTERACTION

	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
RawObjTime	12.8571	7.2857	4.4286	4.0000	5.0000	4.2857	5.4286
RawObjDeadends	0.0868	0.2454	0.0286	0.0238	0.1167	0.0714	0.1238

CPU TIME

	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
Generator	0.0789	1.0073	493.3000	10.6805	11.2441	9.1615	75.9001
Renderer	145.2071	153.5455	214.2179	214.6727	164.7564	200.2857	175.7211
UI	0.2653	0.3832	0.4679	0.3476	0.5143	0.4857	0.4344

OPENGL OBJECT

TIMESTAMP

Time	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	1			1	1	
4	4	2			2	2	
5	5				1		
6	6						
7	7						
8	6						
9	7						
10	4						
11	5						

USER INTERACTION

	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
OpenGL Time	12.0000	5.0000	3.5000	3.0000	8.0000	5.0000	3.0000
OpenGL Deadends	0.1455	0.2000	0.0700	0.0000	0.5000	0.2000	0.0000

	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
Generator	0.0000	1.4500	491.6670	12.5000	6.2500	11.5000	16.1667
Renderer	137.6670	114.2900	163.5000	141.5000	94.5000	114.0000	141.6670
UI	0.4167	0.4000	0.3333	0.5000	0.4167	0.5000	0.5000

SCIENTIFIC DATA

TIMESTAMP

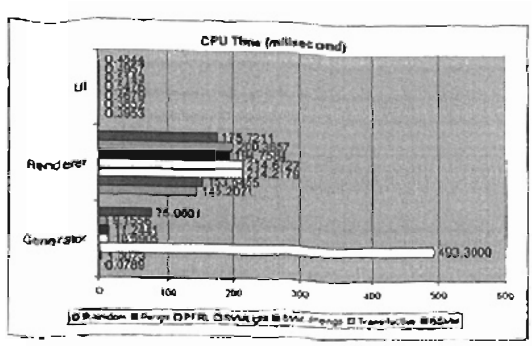
Time	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	1	3	3	3	3	3
4	4	2		4	4		
5	5	3					
6	6	2					
7	7						
8	8						
9	7						
10	6						
11	5						
12	4						
13	3						
14	2						
15	1						

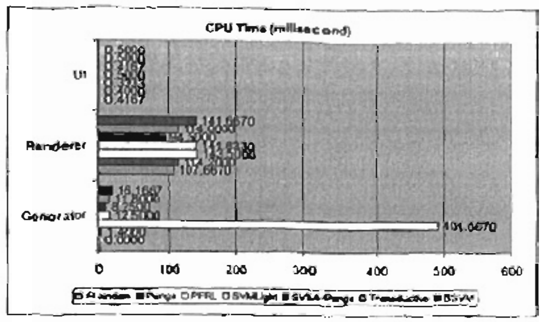
USER INTERACTION

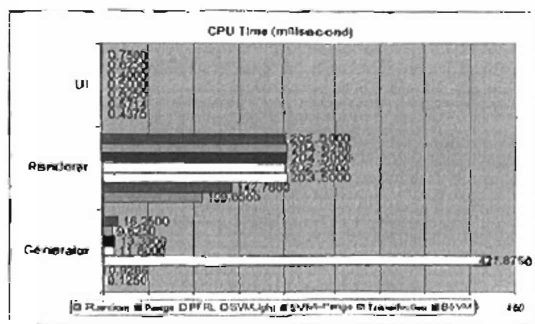
	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
SciTime	18.0000	7.0000	4.0000	5.0000	6.0000	4.0000	4.0000
SciDeadends	0.0676	0.2857	[illegible]	0.0000	0.0000	0.0000	0.0000

CPU TIME

	Random	Pengs	PFRL	SVMLight	SVM-Pengs	Transductive	BSVM
Generator	0.1250	0.5286	421.8750	11.6000	13.3000	9.6250	16.2500
Renderer	159.6500	142.7800	203.6000	202.2000	204.5000	[illegible]	202.5000
UI	3.4372	0.8714	0.6250	0.5608	3.4000	[illegible]	0.7500







Appendix C

EUCLIDEAN DISTANCE AND SIMILARITY VALUE TABLES AND FIGURES

DATASET: TEMPLATEREALGLOBAL

EUCLIDEAN DISTANCE

Gabor

MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	1.01542	1.01542	1.01542	1.01542	1.01542	1.01542	1.01542
1	1.01542	1.01542	0.77004	1.01542	1.01542	0.88789	1.01542
2	1.01542	0.68025	0.67129	0.82376	1.01542	0.66096	0.69989
3	1.01542	1.01542	0.69993		1.01542	0.88019	1.01542
4	1.01542	0.65099			0.71		0.80153
5	1.01542	1.01542					1.01542
6	1.01542	0.75739					0.63437
7	1.01542	1.01542					0.69123
8	1.01542						0.63437
9	1.01542						
10	1.01542						
11	1.01542						
12	1.01542						
13	1.01542						

AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.68307	0.68307	0.68307	0.68307	0.68307	0.68307	0.68307
1	0.71287	0.64874	0.62116	0.64175	0.67246	0.62719	0.647
2	0.7685	0.62943	0.6113	0.47234	0.66674	0.61237	0.62177
3	0.78034	0.64874	0.59606		0.77654	0.62719	0.647
4	0.68068	0.53332			0.65628		0.60262
5	0.69771	0.64874					0.647
6	0.72165	0.63312					0.47443
7	0.77821	0.64874					0.51011
8	0.76261						0.47843
9	0.6827						
10	0.70926						
11	0.61250						
12	0.75173						
13	0.61253						

MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.16818	0.16818	0.16818	0.16818	0.16818	0.16818	0.16818
1	0.27392	0.20445	0.40028	0.20185	0.20185	0.45173	0.32219
2	0.24737	0.39027	0.53802	0.33678	0.20185	0.59633	0.57384
3	0.3971	0.20183	0.52175		0.45163	0.45173	0.32219
4	0.16794	0.43825			0.59962		0.56518
5	0.15942	0.29185					0.32219
6	0.35171	0.54576					0.33094
7	0.25275	0.20185					0.3628
8	0.36109						0.33094
9	0.21357						
10	0.22014						
11	0.18972						
12	0.32526						
13	0.18972						

COLOR HISTOGRAM

MAXIMUM VALUE

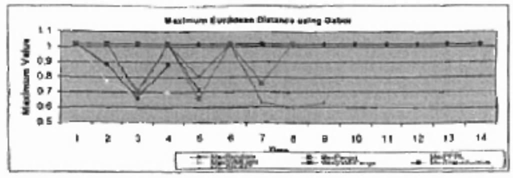
Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	1.26848	1.26848	1.26848	1.26848	1.26848	1.26848	1.26848
1	1.26848	1.2564	1.2437	1.26848	1.2564	1.26087	1.26142
2	1.26848	1.22021	1.22525	1.21235	1.2564	1.2128	1.23863
3	1.26848	1.2564	1.22867		1.26044	1.26087	1.26142
4	1.26848	1.20882			1.17850		1.2495
5	1.26848	1.2564					1.26142
6	1.26848	1.2128					1.19871
7	1.26848	1.2564					1.22033
8	1.26848						1.19871
9	1.26848						
10	1.26848						
11	1.26848						
12	1.25784						
13	1.26848						

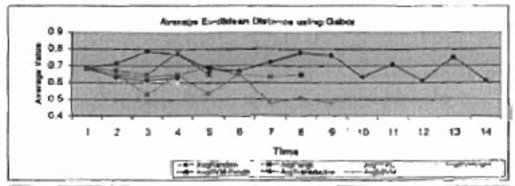
AVERAGE VALUE

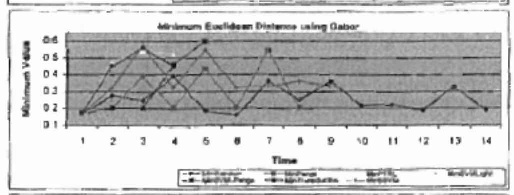
Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	1.13097	1.13097	1.13097	1.13097	1.13097	1.13097	1.13097
1	1.1497	1.07935	1.12965	1.11445	1.12281	1.00788	1.17178
2	1.11168	1.14391	0.98551	1.02548	1.07855	0.98387	1.21796
3	1.06494	1.07335	0.89873		1.10701	1.00788	1.17178
4	1.09763	1.12658			1.15449		0.78476
5	1.00914	1.07855					1.17178
6	1.06541	1.13541					0.9663
7	1.08191	1.07855					1.06021
8	1.10607						0.90611
9	1.11050						
10	1.13136						
11	1.07093						
12	1.13535						
13	1.07093						

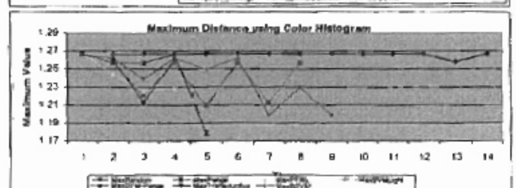
MINIMUM VALUE

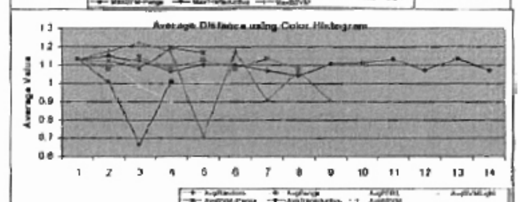
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.9703	0.9703	0.9703	0.9703	0.9703	0.9703	0.9703
1	0.09944	0.31682	0.2959	0.31682	0.30682	0.18388	1.04563
2	0.31682	1.07056	0.14814	0.14805	0.34682	0.21201	1.20228
3	0.30849	0.31682	0.15693		1.07369	0.18366	1.04563
4	0.07762	1.09721			1.1566		0.23103
5	0.20766	0.31682					1.04563
6	0.31682	1.08154					0.30891
7	0.16052	0.31961					0.21969
8	0.31862						0.09891
9	0.09784						
10	0.97656						
11	0.26184						
12	0.04987						
13	0.26184						

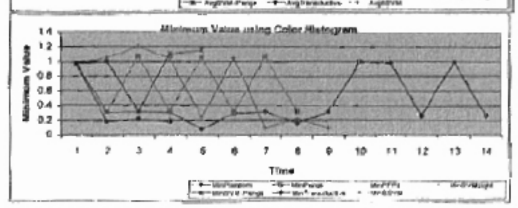








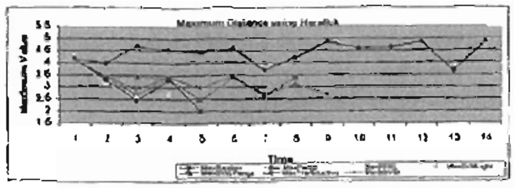




HARALICK

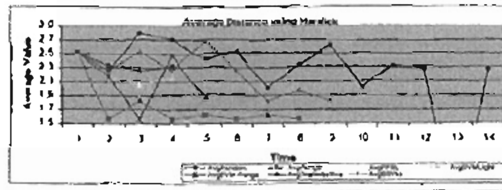
MAXIMUM VALUE

Time	MaxRandom	MaxPerng	MaxPFRL	MaxSVMLight	MaxSVM-Perng	MaxTransductive	MaxSVM
0	4.1518	4.1518	4.1518	4.1518	4.1518	4.1518	4.1518
1	3.97646	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	2.92150					2.66909
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



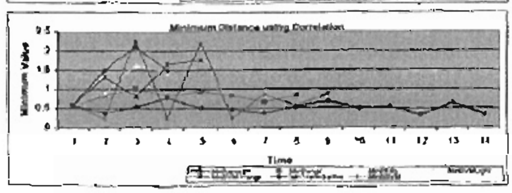
AVERAGE VALUE

Time	AvgRandom	AvgPerng	AvgPFRL	AvgSVMLight	AvgSVM-Perng	AvgTransductive	AvgSVM
0	[illegible]	[illegible]	2.51765	2.51865	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	2.17515	[illegible]	[illegible]	[illegible]	2.26257
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	2.16072		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	0						
13	[illegible]						



MINIMUM VALUE

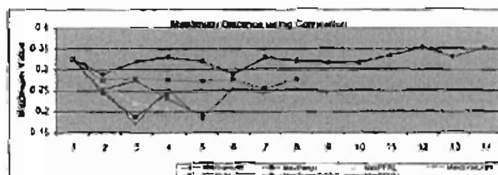
Time	MinRandom	MinPerng	MinPFRL	MinSVMLight	MinSVM-Perng	MinTransductive	MinSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



CORRELATION

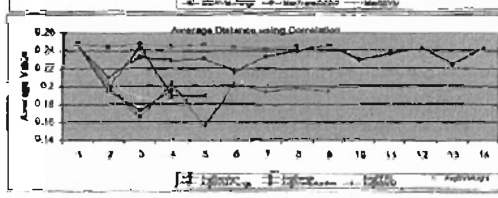
MAXIMUM VALUE

Time	MaxRandom	MaxPerng	MaxPFRL	MaxSVMLight	MaxSVM-Perng	MaxTransductive	MaxSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



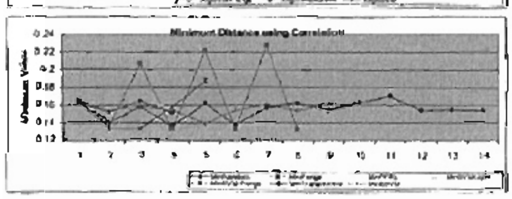
AVERAGE VALUE

Time	AvgRandom	AvgPerng	AvgPFRL	AvgSVMLight	AvgSVM-Perng	AvgTransductive	AvgSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



MINIMUM VALUE

Time	MinRandom	MinPerng	MinPFRL	MinSVMLight	MinSVM-Perng	MinTransductive	MinSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						

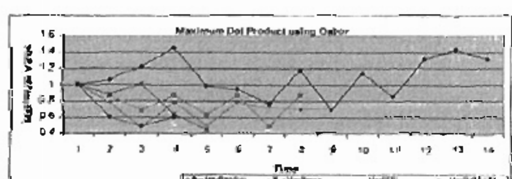


DOT PRODUCT

GABOR

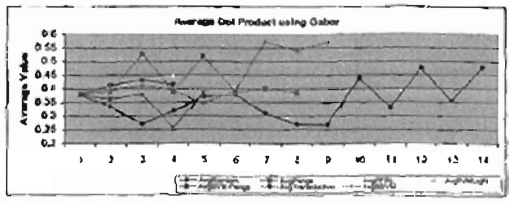
MAXIMUM VALUE

Time	MaxRandom	MaxPerng	MaxPFRL	MaxSVMLight	MaxSVM-Perng	MaxTransductive	MaxSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	0.52513		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



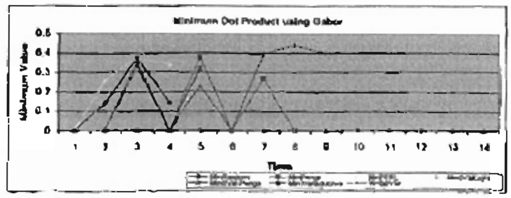
AVERAGE VALUE

Time	AvgRandom	AvgPerge	AvgPFRL	AvgSVMLight	AvgSVMPerng	AvgTransductive	AvgBSVM
0	[illegible]	0.37777	0.[illegible]	[illegible]	0.37777	0.37777	0.37777
1	[illegible]	0.38643	0.41787	[illegible]	0.38188	0.41327	[illegible]
2	[illegible]	0.52135	[illegible]	0.57638	0.37777	0.42947	0.41337
3	[illegible]	0.38643	0.4407		0.25455	0.41337	[illegible]
4	[illegible]	0.51831			0.38294		[illegible]
5	[illegible]	0.38643					[illegible]
6	[illegible]	0.40035					[illegible]
7	[illegible]	0.38643					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



MINIMUM VALUE

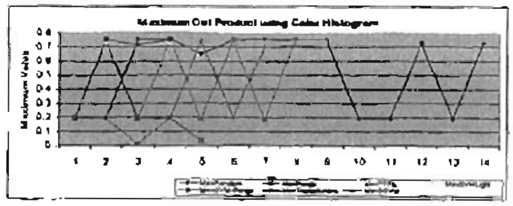
Time	MinRandom	MinPerge	MinPFRL	MinSVMLight	MinSVMPerng	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0.25764	0	0	[illegible]	0
2	0	0.25744	0.37534	0.41491	[illegible]	[illegible]	0.30394
3	0	0	0.33745		[illegible]	[illegible]	0
4	0	0.37307			0.31764		0.22643
5	0	0					0
6	0	[illegible]					[illegible]
7	0	0					0.43947
8	0						[illegible]
9	0						
10	0						
11	0						
12	0						
13	0						



COLOR HISTOGRAM

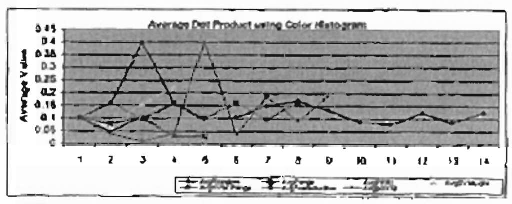
MAXIMUM VALUE

Time	MaxRandom	MaxPerge	MaxPFRL	MaxSVMLight	MaxSVMPerng	MaxTransductive	MaxBSVM
0	[illegible]	0.19215	0.19215	0.19215	0.19215	0.19215	0.19215
1	[illegible]	0.75186	0.73516	0.75186	0.75186	0.74673	0.19215
2	[illegible]	0.18466	0.70274	0.70087	0.19215	0.71115	[illegible]
3	[illegible]	0.75186	0.72645		0.19004	0.74473	0.19215
4	[illegible]	0.1836			0.03166		0.73527
5	[illegible]	0.75186					0.19215
6	[illegible]	[illegible]					[illegible]
7	[illegible]	0.75163					0.7063
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



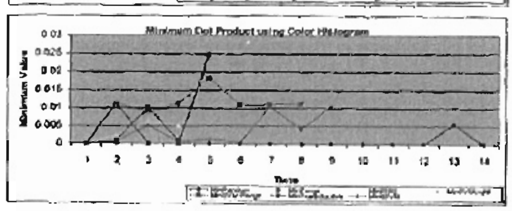
AVERAGE VALUE

Time	AvgRandom	AvgPerge	AvgPFRL	AvgSVMLight	AvgSVMPerng	AvgTransductive	AvgBSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	0.1605	[illegible]	0.07652	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	0.15325	0.11724	[illegible]	[illegible]	[illegible]
3	[illegible]	0.1604	0.22547		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	0.1601					[illegible]
6	[illegible]	0.09729					0.18795
7	[illegible]	0.1601					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



MINIMUM VALUE

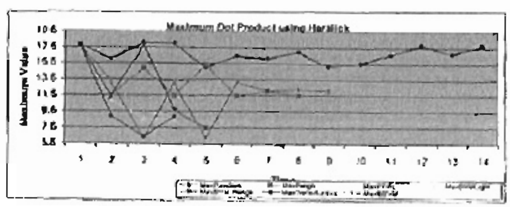
Time	MinRandom	MinPerge	MinPFRL	MinSVMLight	MinSVMPerng	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]
2	0	[illegible]	[illegible]	0.00853	0	[illegible]	[illegible]
3	0	[illegible]	0.00511		0	[illegible]	[illegible]
4	0	[illegible]			[illegible]		[illegible]
5	0	[illegible]					[illegible]
6	0	[illegible]					[illegible]
7	0	[illegible]					0.00430
8	0						[illegible]
9	0						
10	0						
11	0						
12	[illegible]						
13	0						



HARALICK

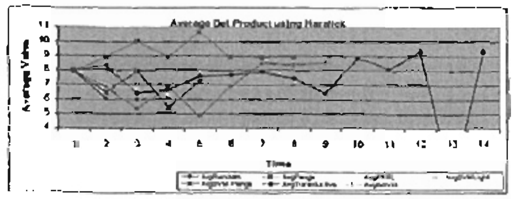
MAXIMUM VALUE

Time	MaxRandom	MaxPerge	MaxPFRL	MaxSVMLight	MaxSVMPerng	MaxTransductive	MaxBSVM
0	[illegible]	17.7288	17.7258	[illegible]	17.7300	17.7300	17.7300
1	[illegible]	11.4563	10.9521	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	14.9737	[illegible]	9.43441	17.7300	[illegible]	[illegible]
3	[illegible]	11.4563	8.4468		[illegible]	[illegible]	[illegible]
4	[illegible]	16.2659			7.45048		[illegible]
5	[illegible]	11.4563					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	11.4563					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



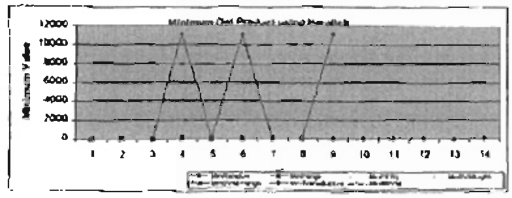
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVMPenga	AvgTransductive	AvgSSVM
0	[illegible]	7.94985	7.94985	7.94985	7.94985	7.94985	7.94985
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.0290	[illegible]
2	[illegible]	[illegible]	[illegible]	7.64135	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			7.18142		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



MINIMUM VALUE

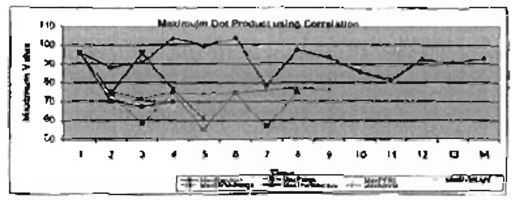
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVMPenga	MinTransductive	MinSSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	5.73346	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	4.35668		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



CORRELATION

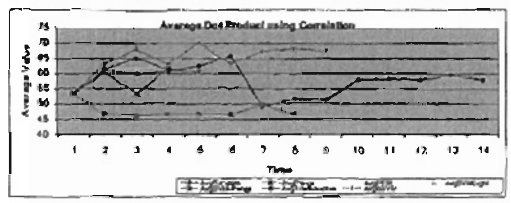
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVMPenga	MaxTransductive	MaxSSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	67.4353		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			60.9519		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



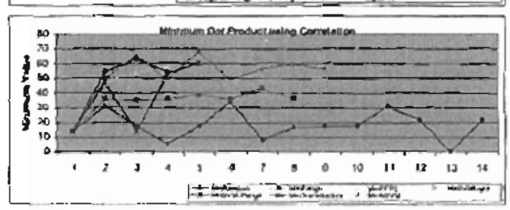
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVMPenga	AvgTransductive	AvgSSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	66.6951	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	62.5726		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVMPenga	MinTransductive	MinSSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	59.7324	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	57.9134		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		[illegible]
5	[illegible]	[illegible]					[illegible]
6	[illegible]	[illegible]					[illegible]
7	[illegible]	[illegible]					[illegible]
8	[illegible]						[illegible]
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						



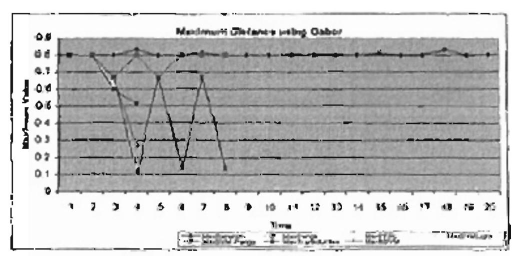
DATASET: [illegible]

1. EUCLIDEAN DISTANCE

GABOR

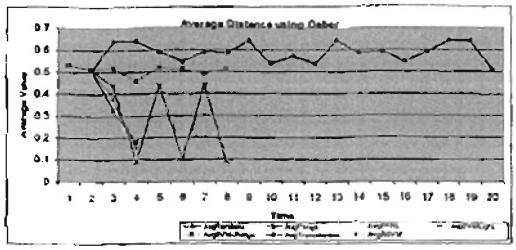
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVMPenga	MaxTransductive	MaxSSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		
5	[illegible]	[illegible]			[illegible]		
6	[illegible]	[illegible]			[illegible]		
7	[illegible]	[illegible]			[illegible]		
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						
16	[illegible]						
17	[illegible]						
18	[illegible]						
19	[illegible]						



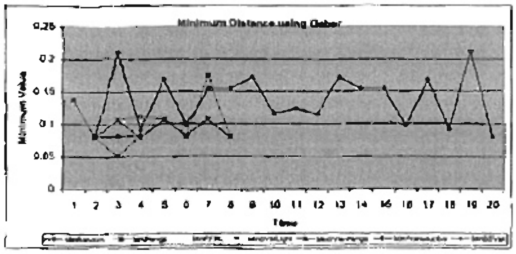
AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPTRL	AvgSVMLight	AvgSVM-Range	AvgTransduction	AvgBSVM
0	0.53037	0.53037	0.53037	0.53037	0.53037	0.53037	0.53037
1	0.51003	0.51003	0.51003	0.51003	0.51003	0.51003	0.51003
2	0.5402	0.54621	0.35053	0.35397	0.43603	0.3251	0.37095
3	0.64133	0.45857	0.10541	0.10667	0.0916	0.18192	0.11646
4	0.58157	0.51621			0.43603		
5	0.54647	0.51003			0.40285		
6	0.54924	0.45927			0.43603		
7	0.58583	0.51003			0.0916		
8	0.64038						
9	0.63761						
10	0.57055						
11	0.53761						
12	0.64036						
13	0.48003						
14	0.56924						
15	0.54447						
16	0.58187						
17	0.64153						
18	0.5402						
19	0.51003						



MINIMUM VALUE

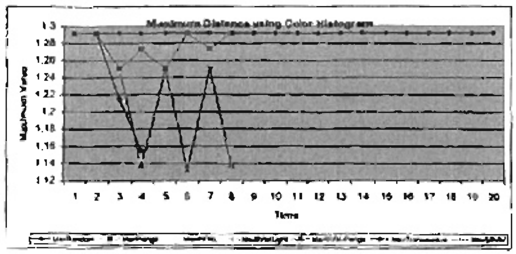
Time	MinRandom	MinRange	MinPTRL	MinSVMLight	MinSVM-Range	MinTransduction	MinBSVM
0	0.13781	0.13781	0.13781	0.13781	0.13781	0.13781	0.13781
1	0.08052	0.08052	0.08053	0.08052	0.08052	0.08052	0.08052
2	0.20997	0.1066	0.11053	0.0747	0.1066	0.08125	0.08037
3	0.08149	0.11146	0.06105	0.05916	0.07852	0.08127	0.08274
4	0.16812	0.1066			0.1066		
5	0.09781	0.08052			0.08127		
6	0.15383	0.17367			0.1091		
7	0.16383	0.08052			0.07683		
8	0.17137						
9	0.11579						
10	0.11912						
11	0.11579						
12	0.17377						
13	0.15367						
14	0.15803						
15	0.09781						
16	0.16812						
17	0.09149						
18	0.20997						
19	0.08052						



COLOR HISTOGRAM

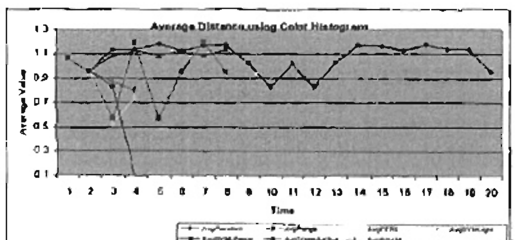
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPTRL	MaxSVMLight	MaxSVM-Range	MaxTransduction	MaxBSVM
0	1.29176	1.29176	1.29174	1.29176	1.29176	1.29176	1.29176
1	1.29176	1.29175	1.29173	1.29176	1.29176	1.29176	1.29176
2	1.29174	1.14258	1.24726	1.2686	1.24934	1.21466	1.24068
3	1.29176	1.27347	1.14531	1.20116	1.13703	1.15455	1.15018
4	1.29176	1.24055			1.24058		
5	1.29176	1.29176			1.1322		
6	1.29179	1.27747			1.24454		
7	1.29176	1.29176			1.13766		
8	1.29176						
9	1.29178						
10	1.29178						
11	1.29176						
12	1.29176						
13	1.29176						
14	1.29176						
15	1.29176						
16	1.29174						
17	1.29179						
18	1.29176						
19	1.29178						



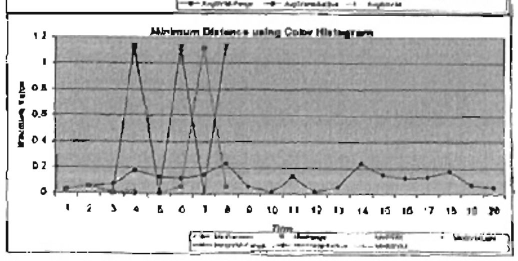
AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPTRL	AvgSVMLight	AvgSVM-Range	AvgTransduction	AvgBSVM
0	1.06021	1.06021	1.06021	1.06021	1.06021	1.06021	1.06021
1	0.93562	0.95582	0.93582	0.95582	0.95582	0.85562	0.95562
2	1.13777	0.57004	0.58019	0.85417	1.08428	0.40276	0.80912
3	1.15211	1.15721	0.77303	0.60504	1.12298	0.08782	0.88322
4	1.18135	0.11904			1.08476		
5	1.12653	0.95543			1.12081		
6	1.13818	1.14422			1.06476		
7	1.17727	0.95382			1.13766		
8	1.02768						
9	0.93482						
10	1.01828						
11	0.83492						
12	1.02708						
13	1.17207						
14	1.18816						
15	1.18003						
16	1.16135						
17	1.13711						
18	1.13777						
19	0.93562						



MINIMUM VALUE

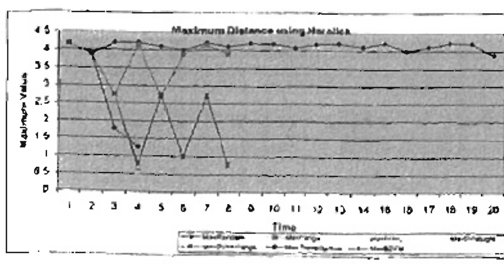
Time	MinRandom	MinRange	MinPTRL	MinSVMLight	MinSVM-Range	MinTransduction	MinBSVM
0	0.02784	0.02784	0.02784	0.02784	0.02784	0.02784	0.02784
1	0.05504	0.05504	0.05504	0.05504	0.05504	0.05504	0.05504
2	0.07252	0.00784	0.05752	0.00784	0.00784	0.00979	0.01291
3	0.17482	1.1207	0.00183	0.05704	1.12917	0.00135	0.02591
4	0.17293	0.00784			0.00784		
5	0.43151	0.05774			1.11056		
6	0.14461	1.11173			0.00784		
7	0.2553	0.05504			1.12917		
8	0.0544						
9	0.01509						
10	0.13349						
11	0.01509						
12	0.0544						
13	0.2385						
14	0.14491						
15	0.12156						
16	0.12983						
17	0.17482						
18	0.07252						
19	0.05504						



HARALICK

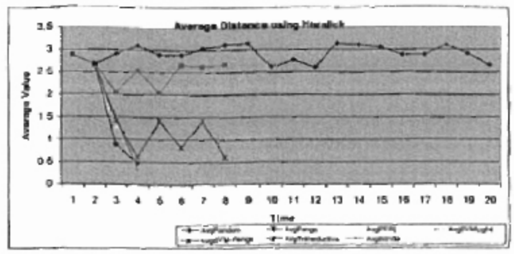
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPTRL	MaxSVMLight	MaxSVM-Range	MaxTransduction	MaxBSVM
0	4.17088	4.17088	4.17088	4.17088	4.17088	4.17088	4.17088
1	3.87601	3.87601	3.87601	3.87601	3.87601	3.87601	3.87601
2	4.20093	2.71487	2.71492	3.04904	2.74482	1.77784	3.71482
3	4.12018	4.12623	2.54924	1.2047	0.72009	1.25081	0.6284
4	4.1085	2.71482			2.71482		
5	3.90078	2.67501			0.95543		
6	4.22018	1.19662			2.71482		
7	4.10088	2.87601			0.75009		
8	4.20203						
9	4.1653						
10	4.07993						
11	4.1853						
12	4.20203						
13	4.10388						
14	4.22018						
15	3.95508						
16	4.1085						
17	4.22018						
18	4.20203						
19	3.87601						



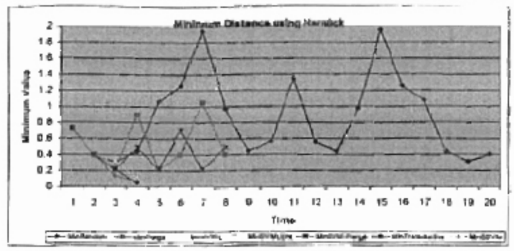
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	2.8749	2.8749	2.8749	2.8749	2.8749	2.8749	2.8749
1	2.65889	2.66669	2.66669	2.65889	2.65889	2.65889	2.66669
2	2.91221	2.05450	1.28534	1.46639	1.41573	0.88316	1.49964
3	3.10659	2.52658	0.53545	0.4942	0.50555	0.47423	0.31331
4	2.88182	2.05453			1.41573		
5	2.88178	2.56686			0.8256		
6	3.04232	2.6212			1.41573		
7	3.10565	2.66669			0.60569		
8	3.13289						
9	2.90211						
10	2.77100						
11	2.60711						
12	3.13238						
13	3.10565						
14	3.04232						
15	2.88178						
16	2.88183						
17	3.10659						
18	2.91224						
19	2.66669						



MINIMUM VALUE

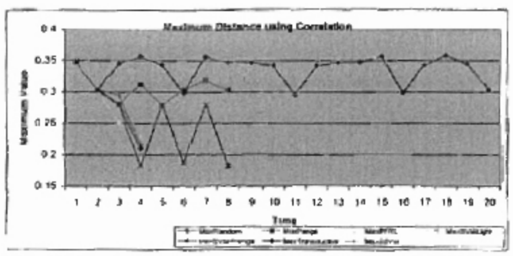
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.72921	0.72921	0.72921	0.72921	0.72921	0.72921	0.72921
1	0.3933	0.3933	0.3933	0.3933	0.3933	0.3933	0.3933
2	0.38012	0.21448	0.22735	0.15065	0.21448	0.21331	0.13522
3	0.43425	0.489	0.16873	0.15065	0.48196	0.04880	0.06684
4	1.00054	0.21448			0.21448		
5	1.25423	0.3933			0.70660		
6	1.96038	1.05784			0.21448		
7	0.97231	0.3933			0.48886		
8	0.43527						
9	0.55837						
10	1.34191						
11	0.55837						
12	0.43527						
13	0.97231						
14	1.96038						
15	1.25423						
16	1.00054						
17	0.43425						
18	0.38012						
19	0.3933						



CORRELATION

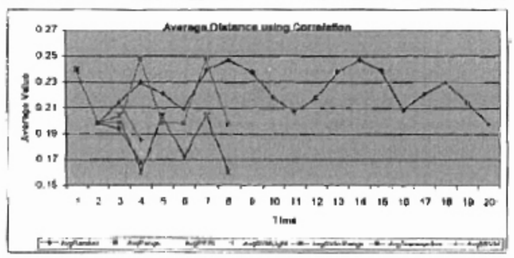
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.34721	0.34721	0.34721	0.34721	0.34721	0.34721	0.34721
1	0.30288	0.30258	0.30288	0.30288	0.30288	0.30284	0.30288
2	0.34442	0.27909	0.35138	0.29962	0.27909	0.28076	0.29452
3	0.35587	0.31234	0.22888	0.22348	0.18213	0.21002	0.21653
4	0.34245	0.27909			0.27909		
5	0.29801	0.30288			0.18782		
6	0.35574	0.31788			0.27909		
7	0.3469	0.30288			0.18213		
8	0.34608						
9	0.34096						
10	0.29465						
11	0.34096						
12	0.34608						
13	0.3469						
14	0.35574						
15	0.29801						
16	0.34245						
17	0.35587						
18	0.34442						
19	0.30288						



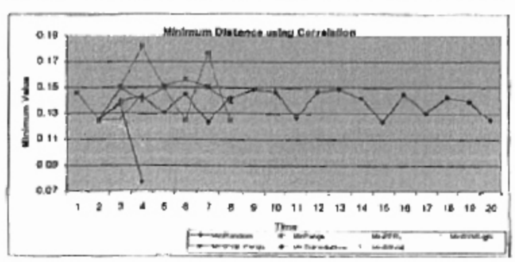
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.23961	0.23961	0.23961	0.23961	0.23961	0.23961	0.23961
1	0.19760	0.19766	0.19766	0.19766	0.19766	0.19766	0.19766
2	0.21409	0.19818	0.2032	0.20236	0.20435	0.19402	0.21562
3	0.22974	0.24824	0.17591	0.17733	0.16015	0.167	0.18513
4	0.22083	0.19818			0.20435		
5	0.20855	0.19766			0.17159		
6	0.22916	0.24817			0.20435		
7	0.24664	0.19766			0.16015		
8	0.23766						
9	0.21799						
10	0.20677						
11	0.21799						
12	0.23766						
13	0.24684						
14	0.22916						
15	0.20855						
16	0.22083						
17	0.22974						
18	0.21400						
19	0.19760						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.14575	0.14575	0.14575	0.14575	0.14575	0.14575	0.14575
1	0.12462	0.12462	0.12462	0.12462	0.12462	0.12462	0.12462
2	0.13912	0.16009	0.12088	0.16009	0.16009	0.13741	0.12034
3	0.14262	0.18156	0.1062	0.10787	0.13935	0.07724	0.14418
4	0.13041	0.15009			0.15009		
5	0.14504	0.12462			0.15601		
6	0.12324	0.17034			0.15006		
7	0.14192	0.12462			0.13935		
8	0.14852						
9	0.1467						
10	0.12711						
11	0.1467						
12	0.14852						
13	0.14192						
14	0.12324						
15	0.14504						
16	0.13041						
17	0.14262						
18	0.13912						
19	0.12462						



2. DOT PRODUCT

GABOR

MAXIMUM VALUE

Time	MaxRandom	MaxPerge	MaxPFRL	MaxSVMLight	MaxSVMPerge	MaxTransductive	MaxBSVM
0	0.74222	0.74222	0.74222	0.74222	0.74222	0.74222	0.74222
1	0.65222	0.65222	0.65222	0.65222	0.65222	0.65222	0.65222
2	[illegible]	0.73024	0.66061	0.86601	0.73024	1.0227	0.56731
3	[illegible]	0.65621	0.58473	0.8272	0.56104	0.58802	0.57842
4	0.67181	0.73024			0.73024		
5	[illegible]	0.65222			[illegible]		
6	[illegible]	0.52125			0.73024		
7	0.76183	0.65222			0.56104		
8	0.63025						
9	0.57030						
10	0.57905						
11	0.57230						
12	0.63025						
13	0.78183						
14	[illegible]						
15	0.70203						
16	0.67181						
17	0.60783						
18	0.78761						
19	0.65222						

AVERAGE VALUE

Time	AvgRandom	AvgPerge	AvgPFRL	AvgSVMLight	AvgSVMPerge	AvgTransductive	AvgBSVM
0	0.25915	0.25915	0.25915	0.25915	0.25915	0.25915	0.25915
1	0.26095	0.26095	0.26495	0.26095	0.26095	0.26095	0.26095
2	0.17509	0.26134	0.42002	0.4432	0.30337	0.47071	[illegible]
3	0.18002	0.2740	[illegible]	0.54002	0.57087	0.5345	0.57498
4	[illegible]	0.26134			0.58137		
5	[illegible]	0.26002			0.6029		
6	[illegible]	0.26004			0.36532		
7	[illegible]	0.26085			0.57011		
8	[illegible]						
9	0.27447						
10	0.22067						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	0.25754						
15	0.2416						
16	[illegible]						
17	[illegible]						
18	[illegible]						
19	0.26095						

MINIMUM VALUE

Time	MinRandom	MinPerge	MinPFRL	MinSVMLight	MinSVMPerge	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.10651	0.14629	0.10651	0.10651	0.18904	0.10651
3	0	1	0.54037	0.24088	[illegible]	0.24383	[illegible]
4	0	[illegible]			[illegible]		
5	0	[illegible]			[illegible]		
6	0	[illegible]			[illegible]		
7	0	0			0.53129		
8	0						
9	0						
10	0						
11	[illegible]						
12	[illegible]						
13	0						
14	0						
15	0						
16	0						
17	0						
18	0						
19	0						

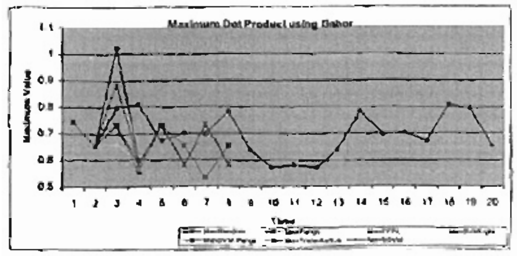
COLOR HISTOGRAM

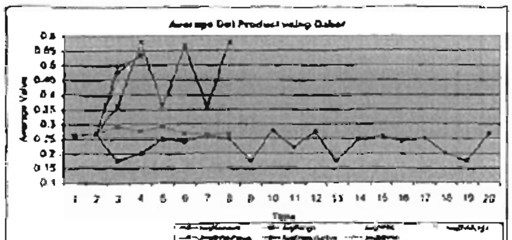
MAXIMUM VALUE

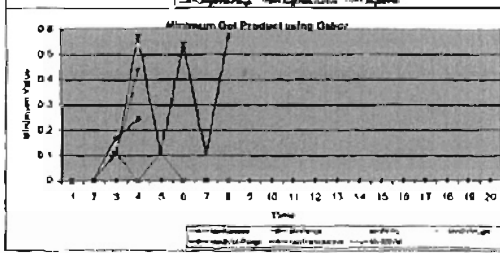
Time	MaxRandom	MaxPerge	MaxPFRL	MaxSVMLight	MaxSVMPerge	MaxTransductive	MaxBSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		
5	0.77083	[illegible]			[illegible]		
6	0.74779	[illegible]			[illegible]		
7	[illegible]	[illegible]			0.61610		
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						
16	[illegible]						
17	[illegible]						
18	[illegible]						
19	[illegible]						

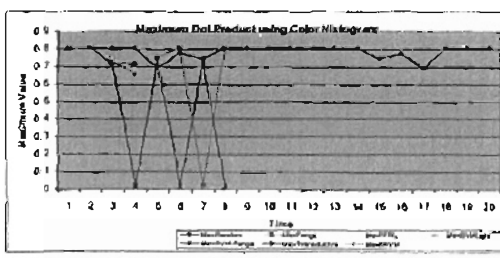
AVERAGE VALUE

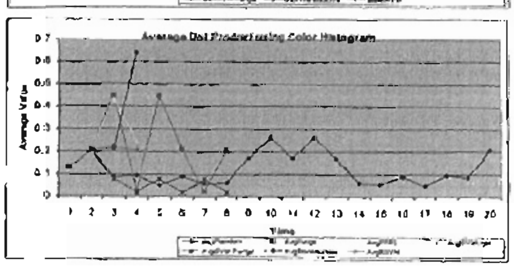
Time	AvgRandom	AvgPerge	AvgPFRL	AvgSVMLight	AvgSVMPerge	AvgTransductive	AvgBSVM
0	0.12502	0.12502	0.12502	0.12502	0.12502	0.12502	[illegible]
1	0.20715	0.20715	0.20715	0.20715	0.20715	0.20715	0.20715
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]			[illegible]		
5	[illegible]	[illegible]			[illegible]		
6	[illegible]	[illegible]			[illegible]		
7	[illegible]	0.20718			[illegible]		
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						
16	[illegible]						
17	[illegible]						
18	[illegible]						
19	0.20715						





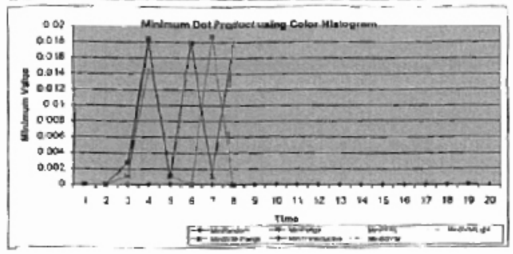






MINIMUM VALUE

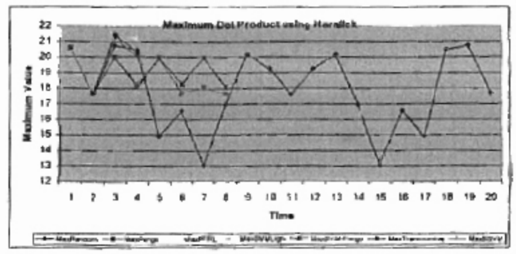
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.05408	0.00124	0.0001	0.00108	0.00079	0.00108
3	0	0.01035	0.01782	0.00413	0.01783	0.01426	0.01443
4	0	0.00108			0.00108		
5	0	0			0.0179		
6	0	0.01854			0.00108		
7	0	0			0.01782		
8	0						
9	0						
10	0						
11	0						
12	0						
13	0						
14	0						
15	0						
16	0						
17	0						
18	0						
19	0						



HARALICK

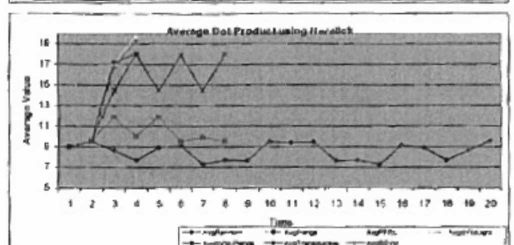
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	20.5567	20.5567	20.5567	20.5567	20.5567	20.5567	20.5567
1	17.6602	17.6602	17.6602	17.6602	17.6602	17.6602	17.6602
2	20.7335	19.9559	21.2594	21.0047	19.9491	21.4248	21.1835
3	20.4701	18.2205	21.2844	20.6364	18.6278	20.2604	20.0425
4	14.8085	19.9651			19.9651		
5	16.5663	17.6602			18.2687		
6	13.0183	16.6385			19.9654		
7	16.963	17.6602			18.0778		
8	20.1746						
9	19.25						
10	17.5798						
11	19.25						
12	20.1285						
13	16.963						
14	13.0183						
15	16.5663						
16	14.9085						
17	20.4701						
18	20.7335						
19	17.6602						



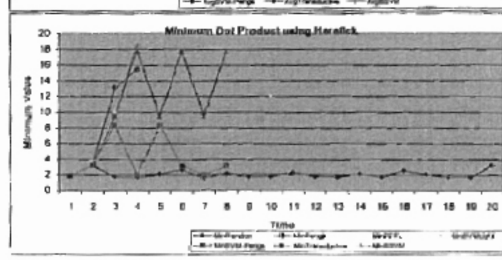
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	8.96575	8.96575	8.96575	8.96575	8.96575	8.96575	8.96575
1	9.54275	9.54275	9.54275	9.54275	9.54275	9.54275	9.54275
2	8.5938	11.655	17.0849	11.6713	14.4819	17.1805	16.6754
3	7.67502	10.0161	18.7345	18.3457	17.8447	17.9713	18.2466
4	8.90564	11.681			14.4819		
5	8.09693	6.54275			17.6788		
6	7.28921	9.89132			14.4819		
7	7.66744	9.54275			17.8447		
8	7.64841						
9	9.43121						
10	8.397						
11	9.45121						
12	7.64841						
13	7.66741						
14	7.28921						
15	8.09693						
16	8.90564						
17	7.67502						
18	8.5938						
19	9.54276						



MINIMUM VALUE

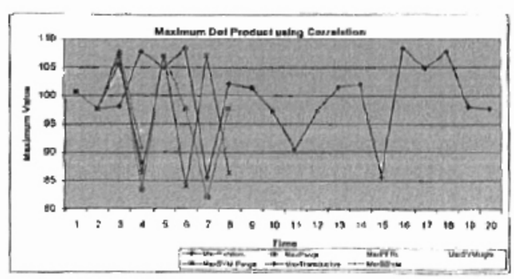
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	1.82969	1.82969	1.82969	1.82969	1.82969	1.82969	1.82969
1	3.2195	3.2195	3.2195	3.2195	3.2195	3.2195	3.2195
2	1.69284	6.34006	10.0575	8.49653	9.49653	13.078	8.49653
3	1.81491	2.00686	17.8895	15.0076	17.7844	16.4137	18.5464
4	3.11101	6.34006			9.49653		
5	2.01866	3.2195			17.8957		
6	1.81491	1.85083			9.49653		
7	2.13213	3.2195			17.7844		
8	1.69284						
9	1.76591						
10	2.24217						
11	1.76591						
12	1.69284						
13	2.13213						
14	1.81491						
15	2.01866						
16	3.11101						
17	1.81491						
18	1.69284						
19	3.2195						



CORRELATION

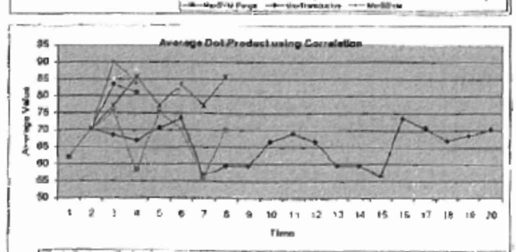
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	100.655	100.655	100.655	100.655	100.655	100.655	100.655
1	97.6563	97.6563	97.6563	97.6563	97.6563	97.6563	97.6563
2	97.9761	106.655	103.037	107.817	106.655	105.544	107.756
3	107.715	83.4245	90.841	87.6503	85.3149	88.1685	90.7522
4	104.787	106.655			106.655		
5	108.265	97.6563			84.0208		
6	85.5005	82.9041			108.655		
7	101.497	97.6563			85.3149		
8	101.389						
9	97.1571						
10	90.445						
11	97.1571						
12	101.389						
13	101.897						
14	85.5005						
15	108.265						
16	104.787						
17	107.715						
18	97.9761						
19	97.6563						



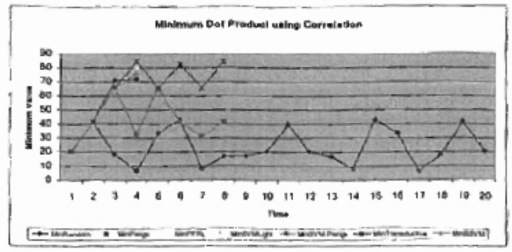
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	61.9506	61.9506	61.9506	61.9506	61.9506	61.9506	61.9506
1	70.1312	70.1312	70.1312	70.1312	70.1312	70.1312	70.1312
2	68.3893	75.2601	84.9371	83.6734	77.1912	83.4733	90.123
3	66.8647	58.2101	87.8898	85.8954	85.4762	80.8405	83.7598
4	70.6328	75.2601			77.1912		
5	73.4438	70.1312			83.3058		
6	56.5594	55.9748			77.1912		
7	59.4461	70.1312			85.4762		
8	59.4265						
9	66.6818						
10	68.8269						
11	66.6118						
12	59.4265						
13	59.4441						
14	56.6594						
15	73.4438						
16	70.6328						
17	66.8647						
18	68.3893						
19	70.1312						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	20.1699	20.1699	20.1699	20.1699	20.1699	20.1699	20.1699
1	41.2879	41.2879	41.2879	41.2879	41.2879	41.2879	41.2879
2	18.1906	65.5177	54.5248	65.5177	65.5177	70.671	65.4584
3	8.00447	32.968	60.5952	71.2459	84.2921	71.6011	76.9129
4	33.4063	65.5117			65.5177		
5	42.2891	41.2879			82.2554		
6	7.08291	30.879			65.5177		
7	16.7377	41.2879			84.2921		
8	17.7753						
9	20.2547						
10	39.7531						
11	20.2547						
12	16.7377						
13	7.98794						
14	42.7891						
15	33.4063						
16	8.00447						
17	18.1906						
18	41.2876						
19	20.1699						



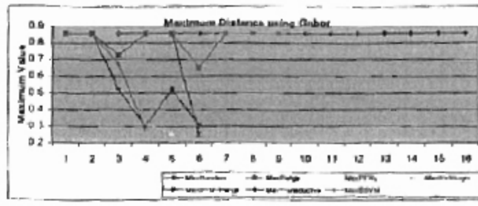
DATASET: [illegible]

1. EUCLIDEAN DISTANCE

GABOR

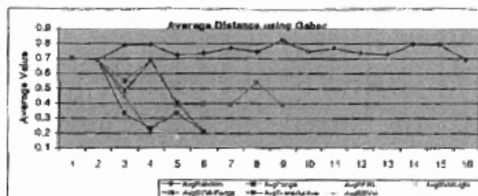
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductiv	MaxBSVM
0	0.85562	0.85562	0.85562	0.85562	0.85562	0.85562	0.85562
1	0.85562	0.85562	0.85562	0.85562	0.85562	0.85562	0.85562
2	0.85562	0.72595	0.52616	0.85562	0.72595	0.3226	0.67359
3	0.85562	0.85562	0.31885	0.31738	0.85562	0.297	0.27889
4	0.85562	0.85562	0.2555		0.85562	0.5226	
5	0.85562	0.84822			0.24917	0.30231	
6	0.85562	0.85562					
7	0.85562	0.85562					
8	0.85562	0.85562					
9	0.85562						
10	0.85562						
11	0.85562						
12	0.85562						
13	0.85562						
14	0.85562						
15	0.85562						



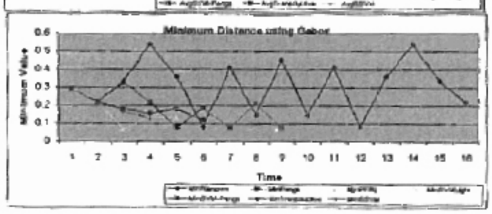
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.704	0.704	0.704	0.704	0.704	0.704	0.704
1	0.68975	0.68975	0.68975	0.68975	0.68975	0.68975	0.68975
2	0.76118	0.55082	0.36496	0.48731	0.48205	0.30284	0.4456
3	0.79162	0.68976	0.23156	0.22701	0.68976	0.22984	0.20371
4	0.72197	0.3904	0.17642		0.40218	0.20299	
5	0.7338	0.3941			0.20753	0.21035	
6	0.76805	0.3904					
7	0.74485	0.54058					
8	0.8217	0.3904					
9	0.74485						
10	0.76805						
11	0.7334						
12	0.72197						
13	0.79162						
14	0.79118						
15	0.68976						



MINIMUM VALUE

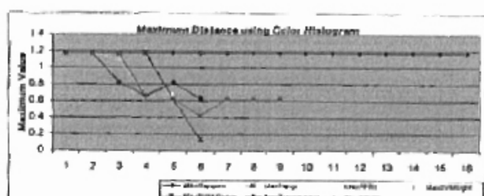
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.28949	0.28949	0.28949	0.28949	0.28949	0.28949	0.28949
1	0.21517	0.21817	0.21817	0.21817	0.21817	0.21817	0.21847
2	0.33494	0.32623	0.09893	0.10234	0.32623	0.17841	0.16605
3	0.53796	0.21817	0.13476	0.14878	0.21817	0.10098	0.12795
4	0.3595	0.07782	0.13007		0.07782	0.17841	
5	0.07882	0.16231			0.18356	0.12069	
6	0.4093	0.07782					
7	0.14527	0.16899					
8	0.44697	0.07782					
9	0.14527						
10	0.4053						
11	0.07882						
12	0.3595						
13	0.53799						
14	0.33495						
15	0.21817						



COLOR HISTOGRAM

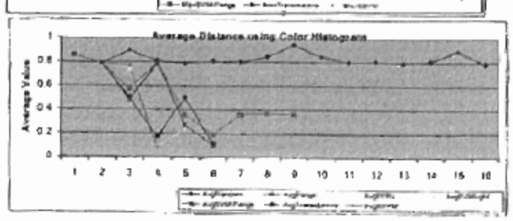
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductiv	MaxBSVM
0	1.17369	1.17369	1.17369	1.17369	1.17369	1.17369	1.17369
1	1.17369	1.17369	1.17369	1.17369	1.17369	1.17369	1.17369
2	1.17369	1.17104	1.09668	1.17104	1.17401	0.81403	1.16033
3	1.17369	1.17369	0.65581	0.62760	1.17369	0.66386	0.65273
4	1.17369	0.62219	0.67576		0.62219	0.81603	
5	1.17369	0.42275			[illegible]	0.63284	
6	1.17369	0.62219					
7	1.17369	0.62219					
8	1.17369	0.62219					
9	1.17369						
10	1.17369						
11	1.17369						
12	1.17369						
13	1.17369						
14	1.17369						
15	1.17369						



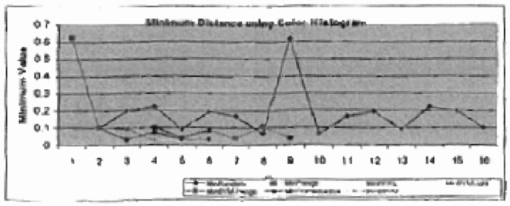
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.854	0.854	0.854	0.854	0.854	0.854	0.854
1	0.78581	0.78581	0.78581	0.78581	0.78551	0.78581	[illegible]
2	0.69193	0.56985	0.74335	0.49137	[illegible]	[illegible]	[illegible]
3	0.60928	0.78581	0.09716	0.15736	0.78581	[illegible]	0.06882
4	0.78695	0.35811	0.22593		0.2703	[illegible]	
5	0.60382	0.19148			0.10251	[illegible]	
6	0.79835	0.35811					
7	0.84377	0.38777					
8	0.54355	0.35811					
9	0.84377						
10	0.79835						
11	0.60382						
12	0.78695						
13	0.60928						
14	0.69193						
15	0.78581						



MINIMUM VALUE

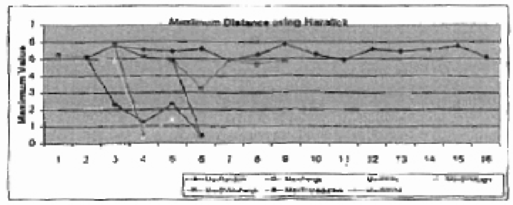
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.62219	0.62219	0.62219	0.62219	0.62219	0.62219	0.62219
1	0.10141	0.10141	0.10141	0.10141	0.10141	0.10141	0.10141
2	0.18611	0.08444	0.11736	0.08573	0.08444	0.03543	0.05592
3	0.22001	0.10141	0.02589	0.07950	0.10141	0.07221	0.02707
4	0.04336	0.05281	0.02493		0.02781	0.10143	
5	0.16155	0.05239			0.0457	0.03478	
6	0.16447	0.03781					
7	0.06828	0.10533					
8	0.61801	0.03781					
9	0.06428						
10	0.16642						
11	0.10995						
12	0.08838						
13	0.22084						
14	0.19618						
15	0.10141						



HARALICK

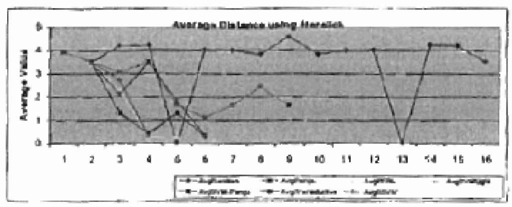
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	5.22379	5.22379	5.22379	5.22379	5.22379	5.22379	5.22379
1	5.08848	5.08848	5.08848	5.08818	5.08878	5.08818	5.08858
2	5.74481	5.81085	4.91806	5.81050	5.81056	2.3022	1.75519
3	5.52196	5.08816	0.3944	0.96046	5.04416	1.25139	1.48227
4	5.41422	4.86871	1.22706		4.69811	2.3401	
5	5.52071	3.2706			0.49595	0.44630	
6	4.90563	4.68911					
7	5.24686	4.68263					
8	5.8006	4.89811					
9	5.74886						
10	4.90562						
11	5.57074						
12	5.41422						
13	5.52196						
14	5.74481						
15	5.08818						



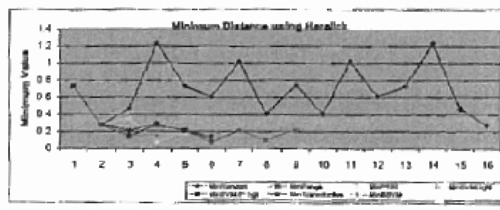
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	3.93727	3.93727	3.93727	3.93727	3.93727	3.93727	3.93727
1	3.49948	3.49948	3.49948	3.49948	3.49948	3.49948	3.49985
2	4.18786	3.08817	2.30839	2.743	2.93088	1.29416	2.7102
3	4.21097	3.49948	0.24176	0.40776	3.49948	0.41123	0.26102
4	0	1.64059	0.27534		1.8234	1.29419	
5	4.01823	1.0988			0.3397	0.29793	
6	3.99595	1.64059					
7	3.82349	2.41774					
8	4.56296	1.64059					
9	3.82349						
10	3.89595						
11	4.03827						
12	0						
13	4.21097						
14	4.18786						
15	3.49948						



MINIMUM VALUE

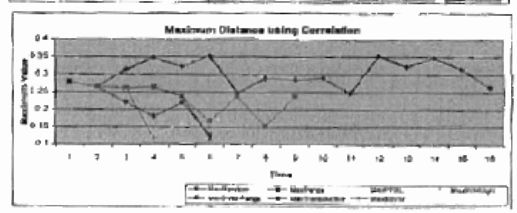
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.72703	0.72703	0.72703	0.72703	0.72703	0.72703	0.72703
1	0.2738	0.2738	0.2738	0.2738	0.2738	0.2738	0.2738
2	0.45871	0.14458	0.3595	0.14458	0.14458	0.20904	0.14458
3	1.23416	0.2738	0.07609	0.20918	0.2738	0.28714	0.14911
4	0.72435	0.2111	0.18101		0.2111	0.20984	
5	0.60547	0.07745			0.13513	0.14025	
6	1.0136	0.2111					
7	0.49253	0.1072					
8	0.74128	0.2111					
9	0.60380						
10	1.0136						
11	0.60547						
12	0.72435						
13	1.23416						
14	0.45871						
15	0.2738						



CORRELATION

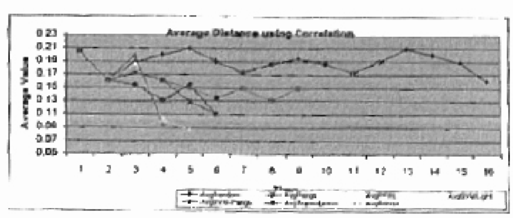
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.27843	0.27843	0.27843	0.27843	0.27843	0.27843	0.27843
1	0.26405	0.26405	0.26405	0.26405	0.26405	0.26405	0.26405
2	0.31457	0.25066	0.25066	0.25064	0.25066	0.22046	0.25204
3	0.34711	0.26405	0.17526	0.18487	0.26405	0.18021	0.1195
4	0.32287	0.23742	0.16045		0.23742	0.22048	
5	0.35219	0.18586			0.11782	0.17773	
6	0.34728	0.23742					
7	0.29081	0.15129					
8	0.28464	0.23742					
9	0.29081						
10	0.24728						
11	0.35219						
12	0.32287						
13	0.34711						
14	0.31457						
15	0.26405						



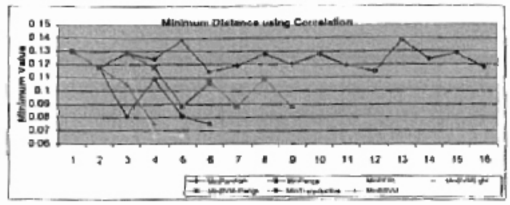
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.20415	0.20415	0.20415	0.20415	0.20415	0.20415	0.20415
1	0.16142	0.16147	0.16142	0.16142	0.16142	0.16142	0.16142
2	0.1684	0.1729	0.16608	0.17643	0.17758	0.15438	0.16873
3	0.1697	0.16142	0.16035	0.13	0.16142	0.15846	0.08402
4	0.2083	0.14877	0.09873		0.17855	0.15438	
5	0.18585	0.13489			0.11073	0.10882	
6	0.17766	0.14877					
7	0.18633	0.13119					
8	0.19438	0.14877					
9	0.18833						
10	0.17266						
11	0.18585						
12	0.2083						
13	0.1697						
14	0.1684						
15	0.16142						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.12972	0.12972	0.12972	0.12972	0.12972	0.12972	0.12972
1	0.11750	0.11755	0.11755	0.11755	0.11755	0.11755	0.11755
2	0.12839	0.12881	0.11068	0.11069	0.12882	0.08068	[illegible]
3	0.12413	0.11755	0.08814	0.08957	0.11700	0.10668	0.07467
4	0.11816	0.08862	0.08574		0.08862	[illegible]	
5	0.11446	0.10738			0.10559	0.11508	
6	0.11909	0.08862					
7	0.12753	0.10001					
8	0.12023	0.08862					
9	0.12753						
10	0.11909						
11	0.11446						
12	0.13819						
13	0.12413						
14	0.12839						
15	0.11750						

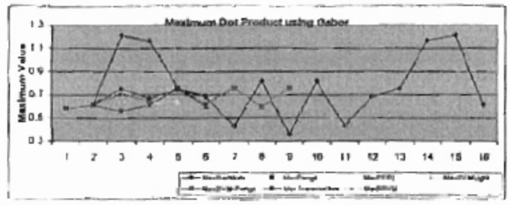


2. DOT PRODUCT

GABOR

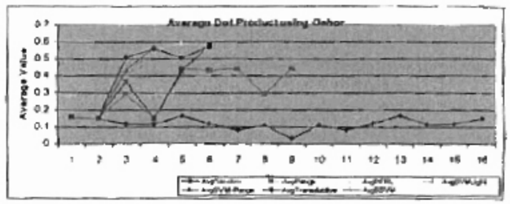
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.57944	0.57944	0.57944	0.57944	0.57944	0.57944	0.57944
1	0.61173	0.61173	0.61173	0.61173	0.61173	0.61173	0.61173
2	1.21005	0.55736	0.73568	0.7676	0.55736	0.75002	0.71343
3	1.16428	0.61173	0.61869	0.54391	0.61173	0.68788	0.63845
4	0.74858	0.75016	0.6357		0.76548	0.75001	
5	0.68152	0.61913			0.70023	0.66822	
6	0.42777	0.75516					
7	0.81341	0.59692					
8	0.35789	0.78518					
9	0.81341						
10	0.42777						
11	0.68152						
12	0.74858						
13	1.16428						
14	1.21005						
15	0.61173						



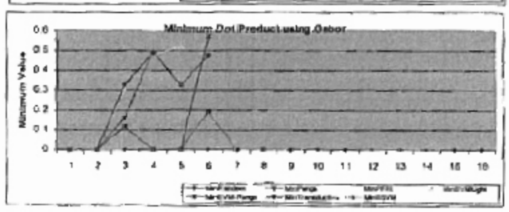
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815	0.15815
1	0.1492	0.1492	0.1492	0.1492	0.1492	0.1492	0.1492
2	0.11418	0.29592	0.50146	0.30338	0.38567	0.50611	0.42918
3	0.11307	0.1492	0.65039	0.56057	0.1492	0.55781	0.56782
4	0.16484	0.44036	0.50141		0.42708	0.50611	
5	0.11709	0.43138			0.58134	0.57212	
6	0.08078	0.44036					
7	0.10812	0.29173					
8	0.03018	0.44036					
9	0.10812						
10	0.08078						
11	0.11709						
12	0.16484						
13	0.11307						
14	0.11418						
15	0.1492						



MINIMUM VALUE

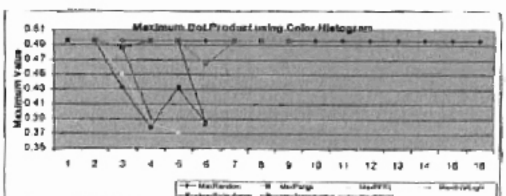
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.1177	0.34584	0	0.1177	0.32604	0.16253
3	0	0	0.47627	0.4897	0	0.48752	0.40658
4	0	0	0.52102		0	0.32604	
5	0	0.16336			0.57105	0.47417	
6	0	0					
7	0	0					
8	0	0					
9	0						
10	0						
11	0						
12	0						
13	0						
14	0						
15	0						



COLOR HISTOGRAM

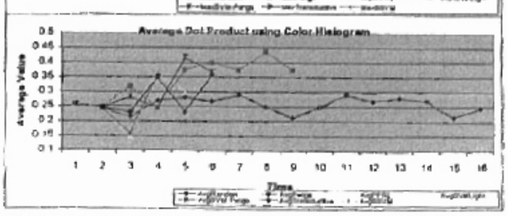
MAXIMUM VALUE

Time	MaxRandom	MinPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.49521	0.49521	0.49521	0.49521	0.49521	0.49521	0.49521
1	0.49521	0.49521	0.49521	0.49521	0.49521	0.49521	0.49521
2	0.49521	[illegible]	0.45143	0.49521	0.48596	0.43208	0.48596
3	0.49521	0.49521	0.38571	0.38072	0.49521	0.37881	0.3918
4	0.49521	0.49521	0.37181		0.49521	0.43206	
5	0.49521	0.4835			0.38402	0.38522	
6	0.49521	0.49521					
7	0.49521	0.49521					
8	0.49521	0.49521					
9	0.49521						
10	0.49521						
11	0.49521						
12	[illegible]						
13	0.49521						
14	0.49521						
15	0.49521						



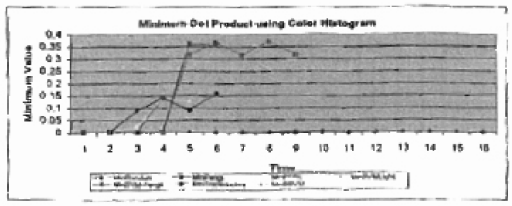
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.25683	0.25683	0.25683	0.25683	0.25683	0.25683	0.25645
1	0.24494	0.24494	0.24494	0.24494	0.24494	0.24494	0.24494
2	0.21311	0.31996	0.14554	0.23953	0.26129	0.23048	0.19118
3	0.25903	0.24494	0.35911	0.35504	0.24494	0.14907	0.35939
4	0.2786	0.37357	0.25461		0.41712	0.23045	
5	0.26705	0.36879			0.3672	0.3561	
6	0.26026	0.37357					
7	0.28802	0.43850					
8	0.21235	0.37357					
9	0.24802						
10	0.29076						
11	0.25703						
12	[illegible]						
13	0.25905						
14	0.21341						
15	0.24494						



MINIMUM VALUE

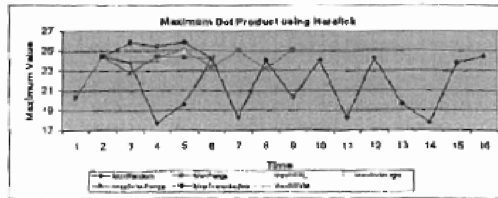
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Peng	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.60114	0.02333	0.0014	0.05144	0.09069	0.00248
3	0	0	0.14213	0.17102	0	0.10154	0.14198
4	0	0.31635	0.12475		0.35817	0.09006	
5	0	0.30469			0.35615	0.15762	
6	0	0.31635					
7	0	0.35821					
8	0	0.31635					
9	0						
10	0						
11	0						
12	0						
13	0						
14	0						
15	0						



HARALICK

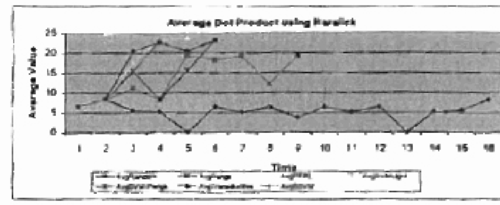
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Peng	MaxTransductive	MaxBSVM
0	20.3001	20.3001	20.3001	20.3001	20.3001	20.3001	20.3001
1	24.4367	24.4367	24.4367	24.4367	24.4367	24.4367	24.4367
2	23.7487	22.778	23.0032	23.2151	22.779	21.8006	23.8818
3	17.7126	24.4367	23.6358	25.6525	24.4367	25.4147	23.9803
4	19.6087	25.0325	24.9463		24.3746	25.8006	
5	24.2040	23.3485			24.2690	24.2690	
6	18.2565	25.0325					
7	24.0395	25.1656					
8	25.2625	25.0325					
9	24.0359						
10	18.2556						
11	24.2063						
12	19.6259						
13	17.7126						
14	23.7487						
15	24.4367						



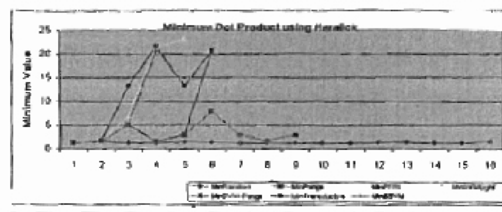
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Peng	AvgTransductive	AvgBSVM
0	6.51141	6.51141	6.51141	6.51141	6.51141	6.51141	6.51141
1	8.25503	8.25503	8.25503	8.25503	8.25503	8.25503	8.25503
2	6.45622	10.9861	17.53	13.6288	15.4821	20.3324	15.1418
3	5.11246	8.25503	21.1467	22.1202	8.25503	22.5077	21.076
4	0	19.1591	23.7305		19.4469	20.3394	
5	6.45638	18.245			21.1603	23.7183	
6	5.01714	19.1591					
7	6.28027	19.6026					
8	3.63819	19.1591					
9	8.28027						
10	5.01714						
11	5.45638						
12	0						
13	5.11246						
14	5.45622						
15	8.25503						



MINIMUM VALUE

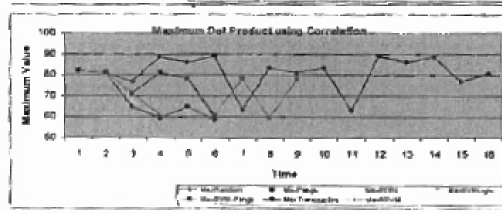
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Peng	MinTransductive	MinBSVM
0	1.25773	1.25773	1.25773	1.25773	1.25773	1.25773	1.25773
1	1.55356	1.55356	1.55356	1.55356	1.55356	1.55356	1.55356
2	1.26959	5.08061	5.96071	1.94801	5.08061	13.2361	5.08061
3	1.23494	1.55356	21.2144	20.8943	1.55356	21.5787	20.6264
4	1.43567	2.9178	22.1051		2.9178	15.2284	
5	1.37567	7.60595			20.6972	20.6956	
6	1.73494	2.9178					
7	1.26053	1.64882					
8	1.26959	2.9174					
9	1.24633						
10	1.23494						
11	1.37567						
12	1.43567						
13	1.23494						
14	1.26959						
15	1.55356						



CORRELATION

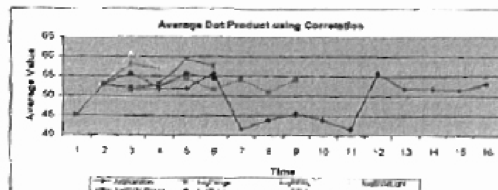
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Peng	MaxTransductive	MaxBSVM
0	82.172	82.172	82.172	82.172	82.172	82.172	82.172
1	80.8541	80.8541	80.8541	80.8541	80.8541	80.8541	80.8541
2	76.7388	71.3051	57.9654	71.3051	71.3051	64.8274	71.3051
3	88.6494	80.8541	40.079	54.1073	80.8541	59.4846	80.3478
4	80.6034	78.234	54.0759		78.234	64.8274	
5	89.0848	80.7873			59.7869	56.523	
6	62.3689	78.234					
7	63.3602	59.9449					
8	80.9082	78.234					
9	80.7672						
10	63.3684						
11	89.0848						
12	80.6034						
13	88.6494						
14	76.7388						
15	80.8541						



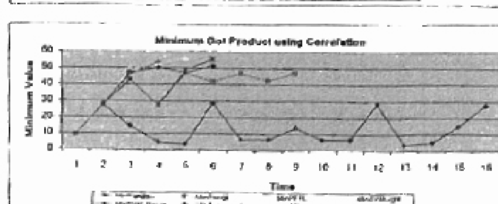
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Peng	AvgTransductive	AvgBSVM
0	45.065	45.065	45.065	45.065	45.065	45.065	45.065
1	53.007	53.007	53.007	53.007	53.007	53.007	53.007
2	51.4168	57.4684	60.8287	57.3208	62.0784	60.6165	58.6487
3	53.716	52.007	57.1628	54.0656	52.007	52.9105	54.4027
4	51.7821	54.2568	58.8914		58.1874	55.8156	
5	35.6849	61.5424			57.4775	54.3174	
6	41.4666	54.2568					
7	43.6410	50.0644					
8	45.0114	54.2568					
9	43.6416						
10	41.4666						
11	55.6999						
12	51.7821						
13	51.716						
14	51.4168						
15	53.007						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Peng	MinTransductive	MinBSVM
0	9.28312	9.28312	9.28312	9.28312	9.28312	9.28312	9.28312
1	27.5313	27.5313	27.5313	27.5313	27.5313	27.5313	27.5313
2	14.6665	42.6301	44.5271	47.6310	42.6303	47.0702	45.1264
3	4.30254	27.5313	50.0324	49.2581	27.5313	50.0465	52.8278
4	3.42758	46.6667	58.0625		48.6418	47.2792	
5	26.5651	41.6559			50.2677	50.992	
6	5.7062	60.8857					
7	6.65014	42.4371					
8	13.6175	46.8867					
9	0.65014						
10	5.7062						
11	26.5651						
12	3.42758						
13	4.70234						
14	14.5665						
15	27.5313						



DATASET: TEMPLATEFORGABORFLOW

1. EUCLIDEAN DISTANCE

GABOR

MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	0.58596	0.58596	0.58596	0.58596	0.58596	0.58596	0.58596
1	0.58596	0.58596	0.58596	0.58596	0.58596	0.58596	0.58596
2	0.58596	0.58596	0.53472	0.58596	0.58596	0.44231	0.58596
3	0.83249	0.58596	0.21404	0.31407	0.20998		0.21998
4	0.77201	0.58596					0.58596
5	0.58596	0.58596					0.58596
6	0.77201	0.58596					
7	0.83249	0.58596					
8	0.58596						
9	0.58596						

AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.48547	0.48547	0.48547	0.48547	0.48547	0.48547	0.48547
1	0.3917	0.3917	0.3917	0.3917	0.3917	0.3917	0.3917
2	0.50111	0.38298	0.27586	0.34994	0.3722	0.26434	0.34588
3	0.4742	0.24919	0.1701	0.20155	0.24041		0.17453
4	0.4174	0.38601					0.34555
5	0.47015	0.26019					0.3917
6	0.4174	0.38298					
7	0.4742	0.3917					
8	0.50111						
9	0.3917						

MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.20688	0.20688	0.20688	0.20688	0.20688	0.20688	0.20688
1	0.13427	0.13427	0.13427	0.13427	0.13427	0.13427	0.13427
2	0.16388	0.15852	0.08243	0.20011	0.17781	0.08334	0.15008
3	0.19598	0.13331	0.13259	0.12936	0.22031		0.11674
4	0.14915	0.16582					0.15008
5	0.2496	0.13331					0.13427
6	0.14915	0.15852					
7	0.15898	0.13427					
8	0.16388						
9	0.13427						

COLOR HISTOGRAM

MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	1.3409	1.3409	1.3409	1.3409	1.3409	1.3409	1.3409
1	1.3409	1.3409	1.3409	1.3409	1.3409	1.3409	1.3409
2	1.3409	1.3409	1.33689	1.3409	1.3409	1.32852	1.3409
3	1.3409	1.3400	1.26741	1.2693	1.26349		1.2647
4	1.3409	1.34031					1.3409
5	1.3409	1.3409					1.3409
6	1.3409	1.3409					
7	1.3409	1.3409					
8	1.3409						
9	1.3409						

AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	1.29251	1.29251	1.29251	1.29251	1.29251	1.29251	1.29251
1	1.2858	1.2858	1.2858	1.2858	1.2858	1.2858	1.2858
2	1.24177	1.27421	1.20384	1.22639	1.26908	1.27064	1.21914
3	1.17828	1.26354	1.2634	1.25968	1.25476		1.25843
4	1.2382	1.25858					1.21914
5	1.23332	1.26354					1.2858
6	1.2382	1.27421					
7	1.17828	1.2858					
8	1.24177						
9	1.2858						

MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	1.16619	1.16619	1.16619	1.16619	1.16619	1.16619	1.16619
1	1.21171	1.21171	1.21171	1.21171	1.21171	1.21171	1.21171
2	0.14087	1.23386	1.22608	0.11826	1.23385	1.2776	0.12353
3	0.14087	1.2268	1.25043	1.23365	1.24816		1.25495
4	0.08061	1.25579					0.12353
5	0.14087	1.2268					1.21171
6	0.08061	1.23386					
7	0.14087	1.21171					
8	0.14087						
9	1.21171						

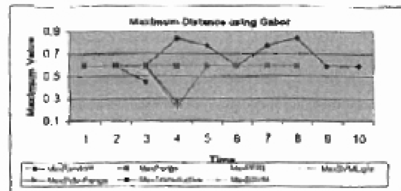
HARALICK

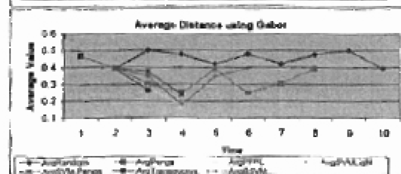
MAXIMUM VALUE

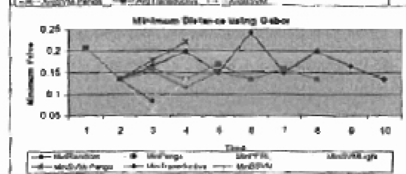
Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	3.19465	3.19465	3.19465	3.19465	3.19465	3.19465	3.19465
1	2.39442	2.39442	2.39442	2.39442	2.39442	2.39442	2.39442
2	3.56756	2.18577	1.62926	2.18577	2.18577	1.32166	2.01396
3	3.61365	2.05077	0.42763	1.03027	0.37286		0.85878
4	3.01691	1.37926					2.01396
5	3.28481	2.05077					2.39442
6	3.01691	2.18577					
7	3.41385	2.39442					
8	3.56756						
9	2.39442						

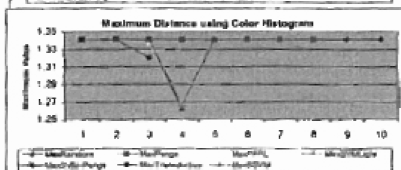
AVERAGE VALUE

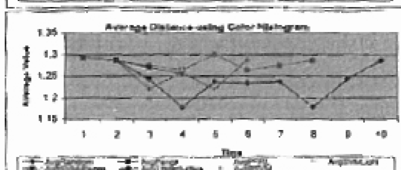
Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	1.72082	1.72082	1.72082	1.72082	1.72082	1.72082	1.72082
1	1.22981	1.22981	1.22981	1.22981	1.22981	1.22981	1.22981
2	1.55245	0.91628	0.83838	1.05012	0.79330	0.71039	1.05296
3	1.53998	0.88944	0.31277	0.12453	0.3808		0.35316
4	1.50255	1.18774					1.05296
5	1.53717	0.88944					1.22981
6	1.50255	0.91628					
7	1.53998	1.22981					
8	1.55245						
9	1.22981						

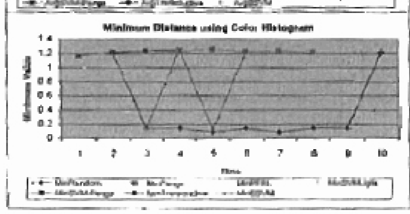


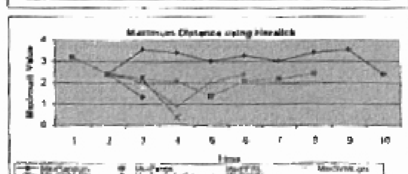


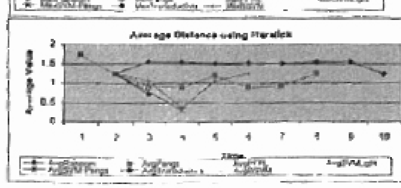






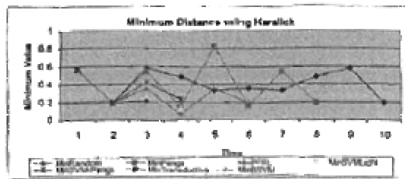






MINIMUM VALUE

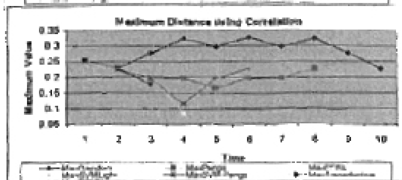
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.56249	0.56249	0.56249	0.56249	0.56249	0.56249	0.56249
1	0.19088	0.19088	0.19088	0.19088	0.19088	0.19088	0.19088
2	0.58162	0.54276	0.24404	0.15271	0.42074	0.20897	0.35258
3	0.46316	0.16565	0.11955	0.15798	0.23245		0.06124
4	0.33107	0.61037					0.35258
5	0.35176	0.16565					0.19088
6	0.33107	0.54276					
7	0.46316	0.19088					
8	0.58162						
9	0.19088						



CORRELATION

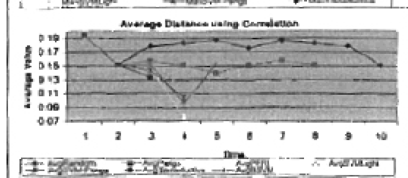
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.25245	0.25245	0.25245	0.25245	0.25245	0.25245	0.25245
1	0.22634	0.22634	0.22634	0.22634	0.22634	0.22634	0.22634
2	0.27688	0.19593	0.28253	0.19593	0.19593	0.17729	0.19643
3	0.32193	0.19559	0.08643	0.1696	0.11431		0.11473
4	0.2966	0.19566					0.19643
5	0.32692	0.19559					0.22634
6	0.2965	0.19593					
7	0.32193	0.22634					
8	0.27588						
9	0.22634						



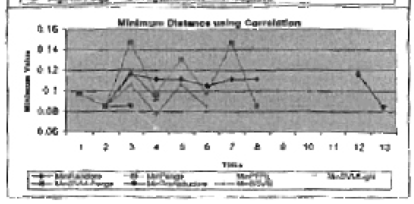
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.19394	0.19394	0.19394	0.19394	0.19394	0.19394	0.19394
1	0.15136	0.15136	0.15136	0.15136	0.15136	0.15138	0.15136
2	0.17912	0.15723	0.14561	0.1535	0.1431	0.13295	0.15164
3	0.1831	0.15096	0.07648	0.11631	0.10356		0.09896
4	0.18721	0.1188					0.15164
5	0.17572	0.15096					0.15136
6	0.18721	0.15723					
7	0.1831	0.15136					
8	0.17912						
9	0.15136						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.09705	0.09705	0.09705	0.09705	0.09705	0.09705	0.09705
1	0.08451	0.08451	0.08451	0.08451	0.08451	0.08451	0.08451
2	0.11619	0.14683	0.08396	0.08036	0.11656	0.08549	0.1059
3	0.11129	0.09786	0.06505	0.06685	0.09302		0.0773
4	0.11141	0.13077					0.1059
5	0.10461	0.09786					0.08451
6	0.11341	0.14683					
7	0.11129	0.08451					
8	0.11619						
9	0.08451						

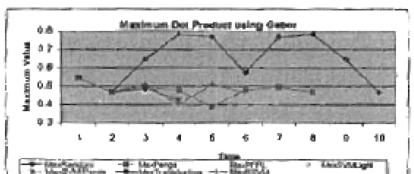


2. DOT PRODUCT

GABOR

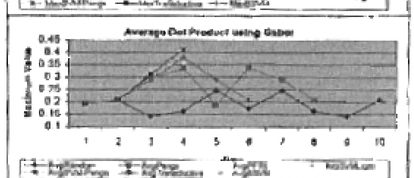
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.54198	0.54198	0.54198	0.54198	0.54198	0.54198	0.54198
1	0.4658	0.4658	0.4658	0.4658	0.4658	0.4658	0.4658
2	0.64514	0.48308	0.47631	0.48308	0.48308	0.48247	0.5077
3	0.78212	0.4777	0.38714	0.44872	0.42038		0.39792
4	0.75595	0.3857					0.5077
5	0.57245	0.4777					0.4658
6	0.75595	0.48308					
7	0.78212	0.4658					
8	0.64514						
9	0.4658						



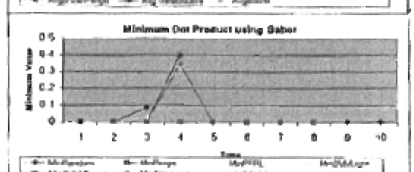
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.19213	0.19213	0.19213	0.19213	0.19213	0.19213	0.19213
1	0.2059	0.2059	0.2059	0.2059	0.2059	0.2059	0.2059
2	0.14068	0.29105	0.33321	0.24247	0.3138	0.3056	0.28997
3	0.16288	0.33744	0.38113	0.3851	0.41015		0.37001
4	0.24543	0.18818					0.28997
5	0.17316	0.33744					0.2059
6	0.24543	0.29105					
7	0.16288	0.2059					
8	0.14068						
9	0.2059						



MINIMUM VALUE

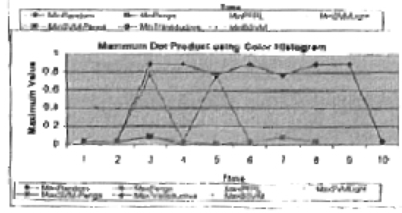
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0.03083	0	0	0.0857	0
3	0	0	0.36083	0.30248	0.3006		0.34320
4	0	0					0
5	0	0					0
6	0	0					
7	0	0					
8	0						
9	0						



COLOR HISTOGRAM

MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.03074	0.03074	0.03074	0.03074	0.03074	0.03074	0.03074
1	0.03122	0.03122	0.03122	0.03122	0.03122	0.03122	0.03122
2	0.88909	0.08278	0.08329	0.77435	0.05278	0.08872	0.78616
3	0.88909	0.03107	0.06822	0.0809	0.0021		0.03098
4	0.76729	0.08752					0.79616
5	0.88909	0.03107					0.03122
6	0.76776	0.08278					
7	0.88909	0.03122					
8	0.88909						
9	0.03122						



AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.01381	0.01381	0.01381	0.01381	0.01381	0.01381	0.01381
1	0.00709	0.00709	0.00709	0.00709	0.00709	0.00709	0.00709
2	0.05682	0.0146	0.01316	0.0520	0.012	0.014	0.0458
3	0.10103	0.00883	0.00774	0.00822	0.00187		0.01434
4	0.0474	0.00413					0.0456
5	0.05352	0.00883					0.00709
6	0.0474	0.0146					
7	0.10103	0.00709					
8	0.05682						
9	0.00709						

MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0.00113	0	0	0.00141	0
3	0	0	0.0073	0.00099	0.00184		0.00273
4	0	0.00079					0
5	0	0					0
6	0	0					
7	0	0					
8	0						
9	0						

HARALICK

MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	8.28292	8.28292	8.28292	8.28292	8.28292	8.28292	8.28292
1	6.93746	6.93746	6.93746	6.93746	6.93746	6.93746	6.93746
2	7.54427	4.87628	5.69143	5.94773	4.87628	5.25384	5.94687
3	8.88939	6.00746	4.50716	5.26831	4.18399		4.81882
4	6.68766	6.15544					5.94687
5	6.19677	6.00746					6.93746
6	6.68768	4.87628					
7	8.88939	6.93746					
8	7.54427						
9	6.93746						

AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	4.06179	4.06179	4.06179	4.06179	4.06179	4.06179	4.06179
1	4.27866	4.27868	4.27866	4.27866	4.27866	4.27866	4.27866
2	4.02516	4.30026	4.54346	4.12626	4.02235	3.8924	4.40714
3	3.93552	4.68787	4.27472	4.49366	4.05607		4.25677
4	4.25506	3.62376					4.40714
5	4.1877	4.68787					4.27866
6	4.25506	4.30026					
7	3.93562	4.27866					
8	4.02515						
9	4.27868						

MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	4.06179	4.06179	4.06179	4.06179	4.06179	4.06179	4.06179
1	4.27866	4.27866	4.27866	4.27866	4.27866	4.27866	4.27866
2	4.02515	4.30026	4.54346	4.12626	4.02235	3.8924	4.40714
3	3.93562	4.68787	4.27472	4.49366	4.05607		4.25677
4	4.25506	3.62376					4.40714
5	4.1877	4.68787					4.27866
6	4.25506	4.30026					
7	3.93552	4.27866					
8	4.02515						
9	4.27866						

CORRELATION

MAXIMUM VALUE

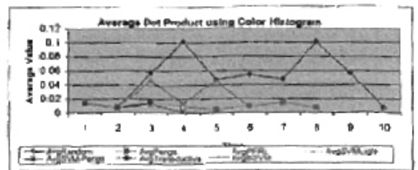
Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	86.0072	86.0072	86.0072	86.0072	86.0072	86.0072	86.0072
1	83.2299	83.2299	83.2299	83.2299	83.2299	83.2299	83.2299
2	83.8738	71.227	67.6955	71.227	71.227	63.1232	71.227
3	92.4062	74.683	66.3907	63.4504	58.9196		66.3657
4	89.2426	59.8449					71.227
5	92.8819	74.683					83.2299
6	89.2426	71.227					
7	92.4062	83.2299					
8	83.8738						
9	83.2299						

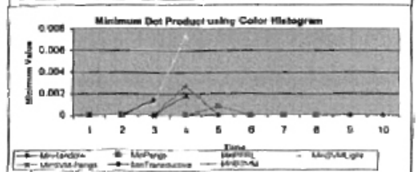
AVERAGE VALUE

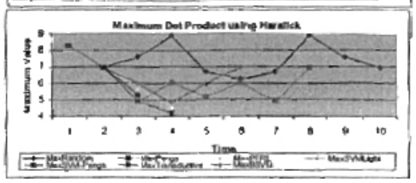
Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	51.4192	51.4192	51.4192	51.4192	51.4192	51.4192	51.4192
1	58.5782	58.5782	58.5782	58.5782	58.5782	58.5782	58.5782
2	56.6408	51.8847	58.154	55.567	58.6106	58.598	59.6067
3	57.0273	54.7017	63.4579	60.2082	58.7309		60.2566
4	59.8809	53.6779					60.6067
5	61.9814	54.7017					58.5782
6	59.8809	51.8847					
7	57.0273	58.5782					
8	56.6408						
9	58.5782						

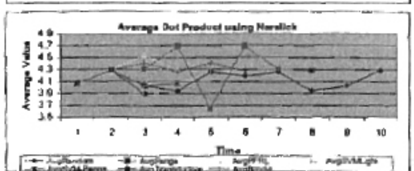
MINIMUM VALUE

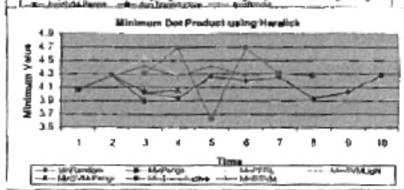
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	9.73722	9.73722	9.73722	9.73722	9.73722	9.73722	9.73722
1	33.6012	33.6012	33.6012	33.6012	33.6012	33.6012	33.6012
2	15.8384	41.2739	48.2569	41.2739	41.2739	49.0255	48.0275
3	5.06633	48.1852	69.3873	57.1659	58.4704		55.5716
4	30.4183	47.7772					45.0275
5	34.9	46.1852					33.6012
6	30.4183	41.2739					
7	5.06633	33.6012					
8	15.8384						
9	33.6012						

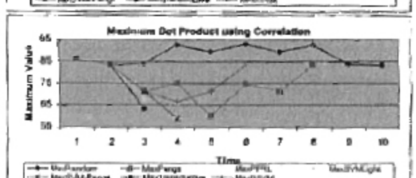


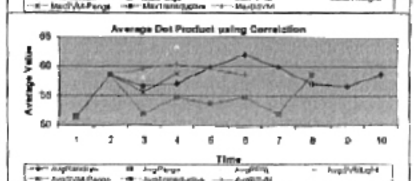


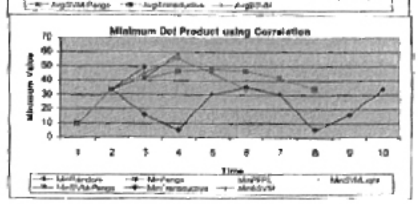












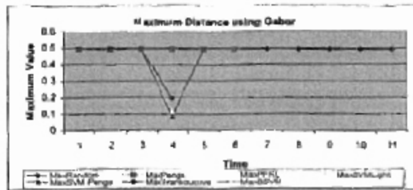
DATASET: TEMPLATEREALOBJPORSCHE

3 EUCLIDEAN DISTANCE

GABOR

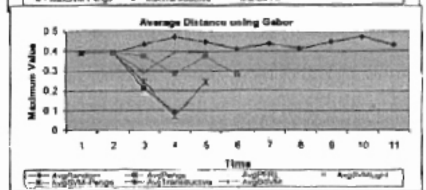
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	0.48978	6.48978	0.48978	0.48978	0.48978	0.48978	0.48978
1	0.48978	0.48978	0.48978	0.48978	0.48978	0.48978	0.48978
2	0.48978	0.48978	0.48978	0.48978	0.48978	0.48978	0.48978
3	0.48978	0.48978	0.10685	0.22655	0.08441	0.19428	0.48978
4	0.48978	0.48978			0.48978		0.48978
5	0.48978	0.48978					
6	0.48978						
7	0.48978						
8	0.48978						
9	0.48978						
10	0.48978						



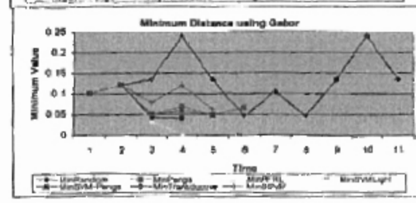
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.38963	0.38963	0.38963	0.38963	0.38963	0.38963	0.38963
1	0.39157	0.39157	0.39157	0.39157	0.39157	0.39157	0.39157
2	0.4333	0.37294	0.19377	0.26245	0.24334	0.21048	0.29498
3	0.47104	0.28282	0.09927	0.09984	0.06939	0.09138	0.39157
4	0.44686	0.37294			0.24334		0.39581
5	0.40957	0.28275					
6	0.43605						
7	0.40957						
8	0.44686						
9	0.47104						
10	0.4333						



MINIMUM VALUE

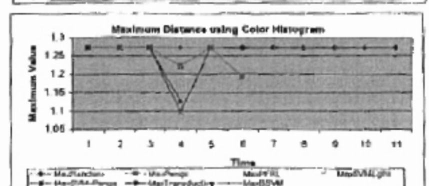
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.10044	0.10044	0.10044	0.10044	0.10044	0.10044	0.10044
1	0.12051	0.12051	0.12051	0.12051	0.12051	0.12051	0.12051
2	0.13452	0.04848	0.0314	0.04848	0.04848	0.04234	0.07803
3	0.23981	0.06889	0.00405	0.02775	0.05787	0.04112	0.12051
4	0.13448	0.04848			0.04848		0.06189
5	0.04618	0.08845					
6	0.10411						
7	0.04618						
8	0.13448						
9	0.23981						
10	0.13452						



COLOR HISTOGRAM

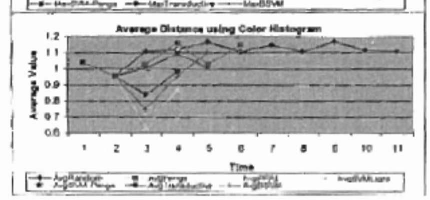
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126
1	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126
2	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126	1.27126
3	1.27126	1.22176	1.08526	1.18835	1.09625	1.12626	1.27126
4	1.27126	1.27126			1.27126		1.27126
5	1.27126	1.19324					
6	1.27126						
7	1.27126						
8	1.27126						
9	1.27126						
10	1.27126						



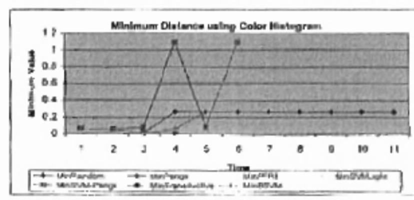
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	1.04004	1.04004	1.04004	1.04004	1.04004	1.04004	1.04004
1	0.95301	0.95301	0.95301	0.95301	0.95301	0.95301	0.95301
2	1.1072	1.02481	0.83233	0.7614	1.00338	0.83902	0.74795
3	1.11876	1.15827	0.87358	0.72986	1.09376	0.96273	0.95301
4	1.16747	1.02481			1.00338		1.10207
5	1.10377	1.14437					
6	1.14586						
7	1.10377						
8	1.16747						
9	1.11876						
10	1.1072						



MINIMUM VALUE

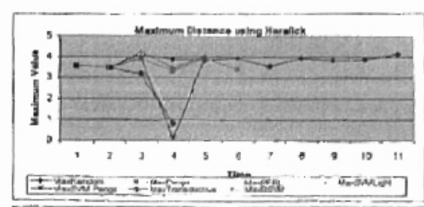
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.06646	0.06646	0.06646	0.06646	0.06646	0.06646	0.06646
1	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053
2	0.01651	0.07754	0.00633	0.01403	0.07754	0.0105	0.01139
3	0.26276	1.08333	0.0053	0.00794	1.09240	0.00844	0.06053
4	0.26276	0.07754			0.07754		0.26276
5	0.26276	1.09352					
6	0.26276						
7	0.26276						
8	0.26276						
9	0.26276						
10	0.26276						



HARALICK

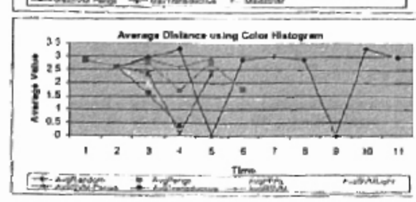
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	3.57018	3.57018	3.57018	3.57018	3.57018	3.57018	3.57018
1	3.48108	3.48108	3.48108	3.48108	3.48108	3.48108	3.48108
2	4.11953	3.92839	4.22321	3.92839	3.92839	3.19663	4.22321
3	3.87492	3.33361	0.65348	1.71245	0.0971	0.80129	3.48108
4	3.82368	3.92839			3.92839		3.9833
5	3.92814	3.41291					
6	3.94307						
7	3.92814						
8	3.82368						
9	3.87492						
10	4.11953						



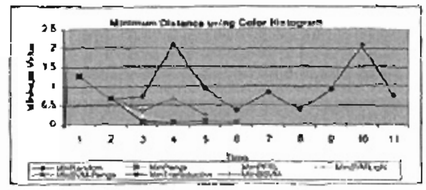
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	2.86874	2.86874	2.86874	2.86874	2.86874	2.86874	2.86874
1	2.61097	2.61097	2.61097	2.61097	2.61097	2.61097	2.61097
2	2.95937	2.76769	2.0068	2.2549	2.37218	1.81132	2.88519
3	3.27526	1.70575	0.35712	0.32534	0.08514	0.35999	2.61097
4	0	2.76769			2.37218		2.91149
5	2.8613	1.74097					
6	2.99017						
7	2.8613						
8	0						
9	3.27526						
10	2.95937						



MINIMUM VALUE

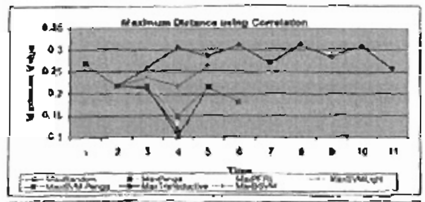
Time	MinRandom	MinRange	MinPFRL	MinSVMLight	MinSVM-Range	MinTransductive	MinBSVM
0	[illegible]	1.29633	1.29633	1.29633	1.29633	1.29633	1.29633
1	0.88073	0.00623	0.88073	0.88073	[illegible]	0.88073	0.88073
2	0.73661	0.06736	0.72430	0.06736	[illegible]	0.07159	1.346
3	2.07851	0.06481	0.00529	0.00567	0.36441	0.04401	[illegible]
4	0.92112	0.06736			0.06730		[illegible]
5	[illegible]	0.06091					
6	0.84254						
7	0.75918						
8	0.92112						
9	2.07851						
10	[illegible]						



CORRELATION

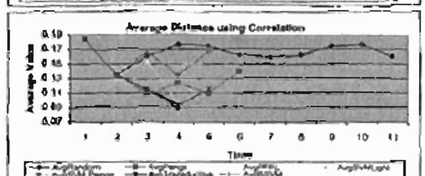
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPFRL	MaxSVMLight	MaxSVM-Range	MaxTransductive	MaxBSVM
0	0.26624	0.26624	0.26624	0.26624	0.26624	0.26624	0.26624
1	0.21727	0.21727	0.21727	0.21727	0.21727	0.21727	0.21727
2	0.25796	0.21586	0.23637	0.22981	0.21580	0.21135	[illegible]
3	0.30196	0.14428	0.13305	0.12112	0.1004	0.11543	0.21727
4	0.28493	0.21586			0.21540		0.20417
5	0.31081	0.18026					
6	0.2908						
7	0.31081						
8	0.28450						
9	0.30609						
10	0.25798						



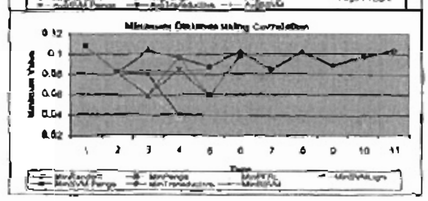
AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPFRL	AvgSVMLight	AvgSVM-Range	AvgTransductive	AvgBSVM
0	0.18337	0.18337	0.18337	0.18337	0.18337	0.18337	0.18337
1	0.1348	0.1345	0.1348	0.1348	0.1348	0.1348	0.1348
2	[illegible]	[illegible]	0.15325	0.1284	0.11488	0.11418	0.16581
3	[illegible]	0.17327	0.09654	0.0937	0.09239	0.08469	0.1348
4	0.17445	0.10914			0.11498		0.16603
5	0.16181	0.17869					
6	0.15744						
7	0.15991						
8	0.17445						
9	0.17852						
10	0.16069						



MINIMUM VALUE

Time	MinRandom	MinRange	MinPFRL	MinSVMLight	MinSVM-Range	MinTransductive	MinBSVM
0	0.10812	0.10812	0.10812	[illegible]	0.10812	0.10812	0.10817
1	0.08253	0.08253	0.04253	[illegible]	0.08253	0.08252	0.08253
2	0.10311	0.05621	0.08249	0.05921	0.05921	0.08024	0.08024
3	0.09585	0.09731	0.02878	0.03779	0.08511	0.04037	0.08353
4	0.0878	0.05821			0.05821		0.06004
5	0.10157	0.09715					
6	0.06432						
7	0.10107						
8	0.0878						
9	0.09585						
10	0.10211						

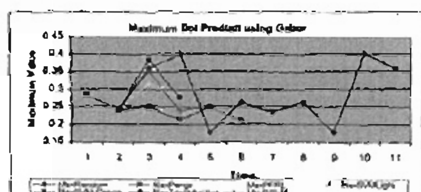


2. DOT PRODUCT

GABOR

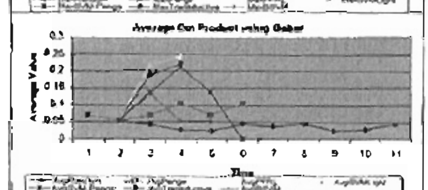
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPFRL	MaxSVMLight	MaxSVM-Range	MaxTransductive	MaxBSVM
0	[illegible]	0.28353	0.28353	0.28353	0.28353	0.28353	0.28353
1	[illegible]	0.2368	0.2368	0.2368	0.2368	0.2368	0.2368
2	[illegible]	0.2461	0.31781	[illegible]	0.2461	0.38437	0.35399
3	0.40019	0.21539	0.27756	0.21604	0.21878	0.27916	0.2368
4	0.17806	0.2481			0.2481		0.28263
5	0.28138	0.2132					
6	0.33583						
7	0.36138						
8	0.17606						
9	0.10019						
10	[illegible]						



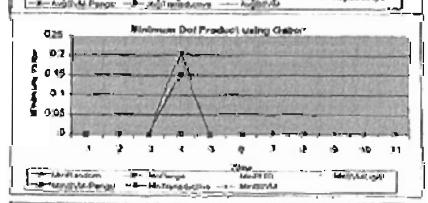
AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPFRL	AvgSVMLight	AvgSVM-Range	AvgTransductive	AvgBSVM
0	0.07019	0.07019	0.07019	0.07019	0.07019	0.07019	0.07019
1	0.05431	0.05431	0.05431	0.05431	0.05431	0.05431	0.05431
2	0.04341	0.07163	0.21634	0.14768	0.13767	0.18759	0.13795
3	0.02782	0.1054	0.24335	0.203	0.21238	0.2216	0.05431
4	0.02496	0.07163			0.13787		[illegible]
5	0.04517	0.10504					
6	0.03067						
7	0.04512						
8	0.03428						
9	0.02782						
10	0.04342						



MINIMUM VALUE

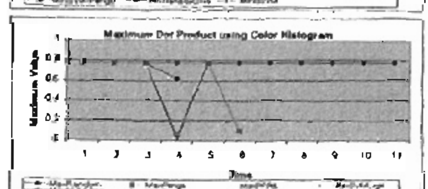
Time	MinRandom	MinRange	MinPFRL	MinSVMLight	MinSVM-Range	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0.21473	0.133	0.22616	0.11663	0
4	0	0			0		0
5	0	0					
6	0						
7	0						
8	0						
9	0						
10	0						



COLOR HISTOGRAM

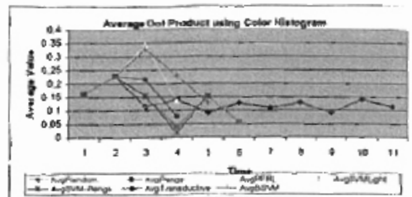
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPFRL	MaxSVMLight	MaxSVM-Range	MaxTransductive	MaxBSVM
0	[illegible]	0.77353	0.77353	0.77353	0.77353	0.77353	0.77353
1	0.77353	0.77353	0.77353	0.77353	0.77353	0.77353	0.77353
2	0.77353	0.77353	0.76279	0.77353	0.77353	0.77353	0.77353
3	0.77352	0.0017	0.61637	0.64684	0.01776	0.61407	0.77353
4	0.77352	0.77353			0.77353		[illegible]
5	0.77353	0.08814					
6	0.77353						
7	0.77353						
8	0.77353						
9	0.77353						
10	0.77353						



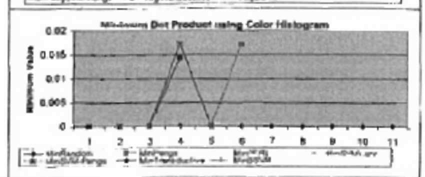
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.16041	0.16041	0.16041	0.16041	0.16041	0.16041	0.16041
1	0.22756	0.22756	0.22756	0.22756	0.22759	0.22765	0.22755
2	0.11302	0.15141	0.34364	0.29989	0.15375	0.2141	0.32748
3	0.1395	0.03958	0.13558	0.22989	0.01753	0.07765	0.22755
4	0.091	0.15141			0.15375		0.12914
5	0.12752	0.05875					
6	0.10848						
7	0.12752						
8	0.091						
9	0.1395						
10	0.11302						



MINIMUM VALUE

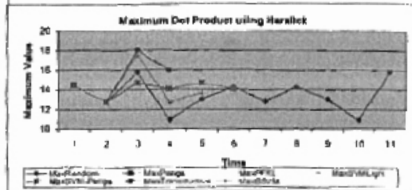
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0.01726	0.01738	0.00896	0.01729	0.01436	0
4	0	0			0		0
5	0	0.01712					
6	0						
7	0						
8	0						
9	0						
10	0						



HARALICK

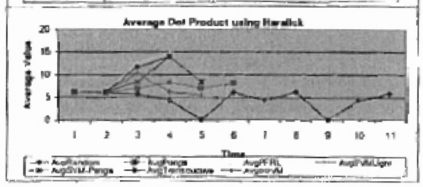
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	14.4304	14.4304	14.4304	14.4304	14.4304	14.4304	14.4304
1	12.7254	12.7254	12.7254	12.7254	12.7254	12.7254	12.7254
2	15.7361	14.6989	18.3366	15.2604	14.6988	18.0124	17.5453
3	10.9218	14.0274	15.8642	14.5845	14.0274	15.8866	12.7254
4	12.9923	14.6989			14.6989		13.6148
5	14.2729	14.0401					
6	12.7887						
7	14.2729						
8	12.9923						
9	10.9218						
10	15.7361						



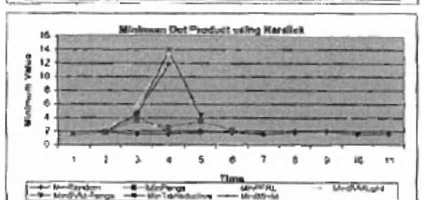
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	6.13205	6.13205	6.13205	6.13205	6.13205	6.13205	6.13205
1	6.11829	6.11829	6.11829	6.11829	6.11829	6.11829	6.11829
2	5.7521	6.83238	12.5399	9.75716	6.35393	11.6986	10.195
3	4.33158	8.22386	14.542	13.3217	13.9443	13.7877	6.11829
4	0	6.83238			6.35393		5.47213
5	6.0863	8.02703					
6	4.29453						
7	6.0863						
8	0						
9	4.33158						
10	5.7521						



MINIMUM VALUE

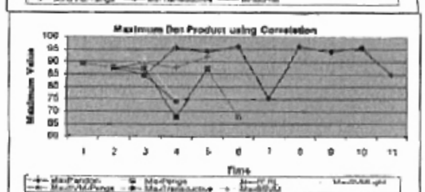
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	1.61837	1.61837	1.61837	1.61837	1.61837	1.61837	1.61837
1	1.81904	1.81904	1.81904	1.81904	1.81904	1.81904	1.81904
2	1.83685	3.49486	5.97632	4.21332	4.21332	4.57964	4.21332
3	1.58317	2.47727	15.4932	9.04063	13.694	11.7369	1.81904
4	1.9069	3.49486			4.21332		1.63689
5	1.6071	2.10513					
6	1.58317						
7	1.6071						
8	1.9069						
9	1.58317						
10	1.63689						



CORRELATION

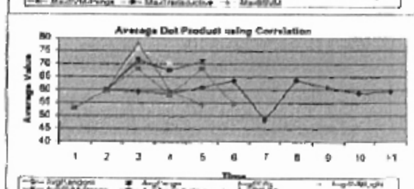
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	89.1515	89.1515	89.1515	89.1515	89.1515	89.1515	89.1515
1	87.583	87.583	87.583	87.583	87.583	87.583	87.583
2	84.5533	87.2455	90.8781	89.6252	87.2455	84.4213	89.2176
3	95.4855	67.8197	76.2208	70.1211	67.8197	74.0585	87.583
4	93.9614	87.2455			87.2455		91.9377
5	96.0681	67.8467					
6	78.2721						
7	96.0881						
8	93.9614						
9	95.4856						
10	84.5633						



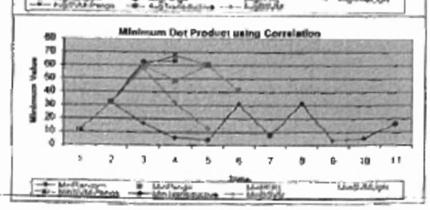
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	52.7692	52.7692	52.7692	52.7692	52.7692	52.7692	52.7692
1	59.7916	59.7916	59.7916	59.7916	59.7916	59.7916	59.7916
2	59.2368	68.0772	76.8631	73.6522	70.7966	71.7821	77.0958
3	58.6292	57.953	70.4048	67.6418	67.9875	67.3069	59.7916
4	60.8544	68.0772			70.7966		54.1049
5	63.6303	54.5442					
6	48.4887						
7	63.6303						
8	60.8544						
9	58.6292						
10	59.2368						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	10.7189	10.7189	10.7189	10.7189	10.7189	10.7189	10.7189
1	31.7011	31.7011	31.7011	31.7011	31.7011	31.7011	31.7011
2	16.2455	60.1335	60.0019	60.1336	60.1336	62.5856	57.6372
3	5.37432	48.1567	65.2459	63.1125	67.4147	63.3053	31.7011
4	3.81062	60.1335			60.1335		12.3632
5	31.1129	41.1439					
6	7.17684						
7	31.1129						
8	3.81062						
9	5.37432						
10	16.2455						



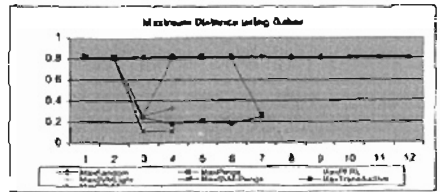
DATASET: TEMPORAL CALISOCCER

1. EUCLIDEAN DISTANCE

GABOR

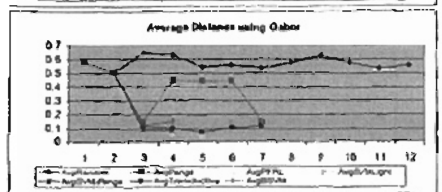
MAXIMUM VALUE

Time	MaxRandom	MaxPenge	MaxPFRL	MaxSVMLight	MaxSVM-Penge	MaxTransductive	MaxBSVM
0	0.80787	0.80787	0.80787	0.80787	0.80787	0.80787	0.80787
1	0.80787	0.80787	0.80787	0.80787	0.80787	0.80787	0.80787
2	0.80787	0.28558	0.1424	0.24352	0.11418	0.24252	[illegible]
3	0.80787	0.80787	0.09044	0.24881	0.10733	0.17916	0.32503
4	0.80787	0.80787	0.08735	0.178		0.20019	
5	0.80787	0.80787		0.24891		0.17916	
6	0.80787	0.25552				0.24252	
7	0.80787						
8	0.80787						
9	0.80787						
10	0.80787						
11	0.80787						



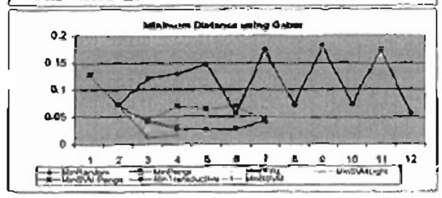
AVERAGE VALUE

Time	AvgRandom	AvgPenge	AvgPFRL	AvgSVMLight	AvgSVM-Penge	AvgTransductive	AvgBSVM
0	0.57616	0.57616	0.57616	0.57616	0.57616	0.57616	0.57616
1	0.50373	0.50373	0.50373	0.50373	0.50373	0.50373	0.50373
2	0.64644	0.14723	0.07811	0.12702	0.09749	0.17202	0.12727
3	[illegible]	0.4487	0.05507	0.14148	0.08273	[illegible]	0.15289
4	0.54007	0.44512	0.04592	0.09976		0.07441	
5	0.56685	0.4487		0.14148		0.10324	
6	0.63378	0.14783				0.12202	
7	0.57607						
8	0.62589						
9	0.57507						
10	0.53379						
11	[illegible]						



MINIMUM VALUE

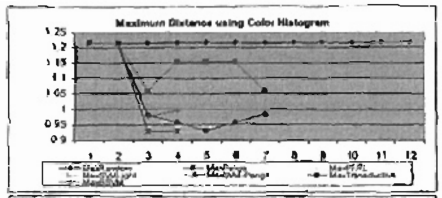
Time	MinRandom	MinPenge	MinPFRL	MinSVMLight	MinSVM-Penge	MinTransductive	MinBSVM
0	0.12606	0.12606	0.12606	0.12606	0.12606	0.12606	0.12606
1	0.07245	0.07245	0.07245	0.07245	0.07245	0.07245	0.07245
2	0.12066	0.04297	0.02871	0.04250	0.04297	0.04059	0.01221
3	0.12901	0.07025	0.0274	0.04290	0.03137	0.02589	0.0156
4	0.14825	0.06512	0.02139	0.04811		0.02527	
5	0.05695	0.07029		0.04294		0.02685	
6	0.17306	0.04597				0.04069	
7	0.07736						
8	0.18171						
9	0.07736						
10	0.17306						
11	[illegible]						



COLOR HISTOGRAM

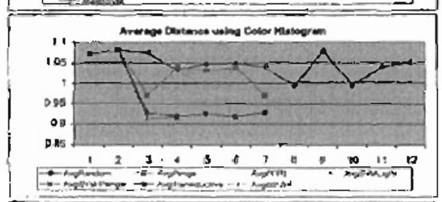
MAXIMUM VALUE

Time	MaxRandom	MaxPenge	MaxPFRL	MaxSVMLight	MaxSVM-Penge	MaxTransductive	MaxBSVM
0	1.21473	1.21473	1.21473	1.21473	1.21473	1.21473	1.21473
1	1.21473	1.21473	1.21473	1.21473	1.21473	1.21473	1.21473
2	1.21473	[illegible]	0.92809	0.9807	0.92774	0.9807	[illegible]
3	1.21473	[illegible]	0.97745	[illegible]	0.92875	0.95037	0.99432
4	1.21473	[illegible]	0.97764	[illegible]		0.93319	
5	1.21473	1.16399		[illegible]		0.95037	
6	1.21473	1.05705				0.9807	
7	1.21473						
8	1.21473						
9	1.21473						
10	1.21473						
11	1.21473						



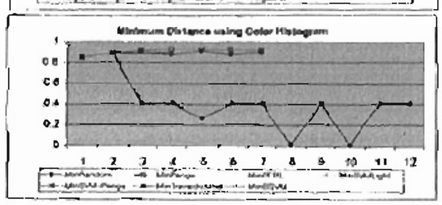
AVERAGE VALUE

Time	AvgRandom	AvgPenge	AvgPFRL	AvgSVMLight	AvgSVM-Penge	AvgTransductive	AvgBSVM
0	1.07167	1.07167	1.07167	1.07167	1.07167	1.07167	1.07167
1	1.07933	1.07933	1.07933	1.07933	1.07933	1.07933	1.07933
2	1.07385	0.97042	0.91043	0.97731	0.91434	0.92731	0.92355
3	1.03268	1.03845	0.93739	0.86537	0.914	0.91733	0.92235
4	[illegible]	[illegible]	0.92485	0.86968		0.92424	
5	1.0407	[illegible]		0.86537		0.91733	
6	1.00756	0.97042				0.92731	
7	0.00716						
8	1.07018						
9	[illegible]						
10	[illegible]						
11	1.0407						



MINIMUM VALUE

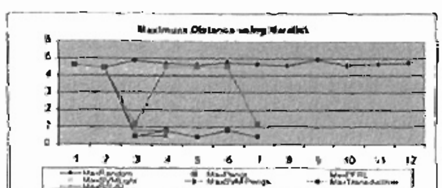
Time	MinRandom	MinPenge	MinPFRL	MinSVMLight	MinSVM-Penge	MinTransductive	MinBSVM
0	0.84832	0.84832	0.84832	0.84832	0.84832	0.84832	0.84832
1	0.88048	[illegible]	0.88048	0.72848	0.88048	0.88048	0.88048
2	0.40449	0.92444	0.89448	0.00156	0.88686	0.00118	0.43166
3	0.40449	0.9251	0.91704	0.01858	0.90002	0.88202	0.68187
4	0.26884	0.97746	0.91692	[illegible]		0.91206	
5	0.40449	[illegible]		[illegible]		0.88282	
6	0.40449	[illegible]				0.00118	
7	0.0106						
8	0.40449						
9	0.0106						
10	0.40449						
11	[illegible]						



HARALICK

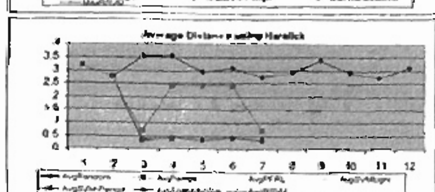
MAXIMUM VALUE

Time	MaxRandom	MaxPenge	MaxPFRL	MaxSVMLight	MaxSVM-Penge	MaxTransductive	MaxBSVM
0	4.60797	4.66791	4.60797	4.60797	4.60797	4.60797	4.60797
1	4.44064	4.44064	4.44064	4.44064	4.44064	4.44064	4.44064
2	4.57043	1.14554	0.76078	0.41262	0.50053	0.47202	2.76436
3	[illegible]	[illegible]	0.43078	2.22134	0.90744	[illegible]	[illegible]
4	[illegible]	[illegible]	0.38692	0.67119		[illegible]	
5	4.72662	4.48747		2.22134		0.78543	
6	4.64063	1.14574				0.47202	
7	4.5607						
8	4.61732						
9	4.5607						
10	[illegible]						
11	[illegible]						



AVERAGE VALUE

Time	AvgRandom	AvgPenge	AvgPFRL	AvgSVMLight	AvgSVM-Penge	AvgTransductive	AvgBSVM
0	3.21784	3.21784	3.21784	3.21784	3.21784	3.21784	3.21784
1	2.72984	2.72984	2.72984	2.72984	2.72984	2.72984	2.72984
2	3.53157	0.70008	0.29011	0.34668	0.41322	0.34956	0.35415
3	3.56048	2.47127	0.38606	0.43657	0.41309	0.43783	0.41411
4	2.03716	2.41143	0.3650	0.41031		0.30538	
5	3.11648	[illegible]		[illegible]		0.43783	
6	2.77518	[illegible]				0.34956	
7	2.91518						
8	3.41702						
9	2.91018						
10	2.74138						
11	3.11068						



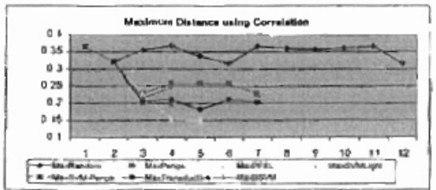
MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.70954	0.70954	0.70954	0.70954	0.70954	0.70954	0.70954
1	0.14216	0.14216	0.14216	0.14216	0.14216	0.14216	0.14216
2	0.27143	0.34919	0.31086	0.15143	0.34919	0.15143	0.06902
3	0.65401	0.35489	0.32703	0.16567	0.2979	0.33733	0.14699
4	0.53916	0.35327	0.32183	0.1399		0.31341	
5	0.23278	0.35489		0.16567		0.33733	
6	0.25927	0.34919				0.15143	
7	0.38654						
8	0.75595						
9	0.38654						
10	0.25927						
11	0.23278						

CORRELATION

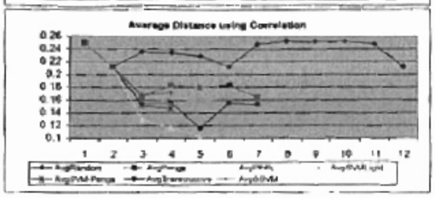
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.3626	0.3626	0.3626	0.3626	0.3626	0.3626	0.3626
1	0.32084	0.32084	0.32084	0.32084	0.32084	0.32084	0.32084
2	0.35432	0.22616	0.2252	0.20273	0.19938	0.20273	0.21415
3	0.38608	0.25602	0.15176	0.21286	0.19678	0.21023	0.24368
4	0.33688	0.25618	0.14866	0.21709		0.18095	
5	0.31471	0.25602		0.21260		0.21023	
6	0.38555	0.22616				0.20273	
7	0.35897						
8	0.35574						
9	0.35897						
10	0.38555						
11	0.31471						



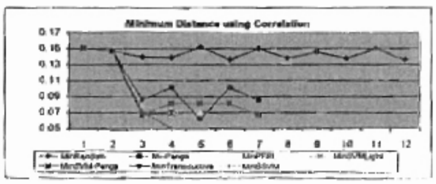
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.24961	0.24961	0.24961	0.24961	0.24961	0.24961	0.24961
1	0.21214	0.21214	0.21214	0.21214	0.21214	0.21214	0.21214
2	0.23431	0.16411	0.12781	0.15313	0.15055	0.16313	0.16762
3	0.23405	0.18315	0.11621	0.16193	0.14605	0.16557	0.17098
4	0.22616	0.1793	0.10282	0.15894		0.11578	
5	0.21176	0.18315		0.16193		0.15557	
6	0.24648	0.16411				0.15313	
7	0.25128						
8	0.25033						
9	0.25128						
10	0.24648						
11	0.21176						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.15037	0.15037	0.15037	0.15037	0.15037	0.15037	0.15037
1	0.14647	0.14647	0.14647	0.14647	0.14647	0.14647	0.14647
2	0.13031	0.0671	0.07832	0.08534	0.0671	0.08534	0.07142
3	0.13841	0.08127	0.07216	0.10312	0.06924	0.1006	0.04867
4	0.15174	0.08132	0.06921	0.11754		0.06137	
5	0.1358	0.08127		0.10312		0.1006	
6	0.15016	0.0671				0.08534	
7	0.13734						
8	0.14592						
9	0.13734						
10	0.15016						
11	0.1358						

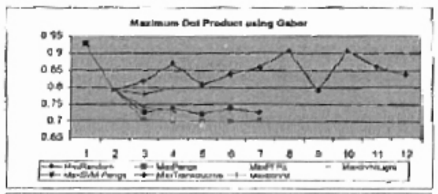


2. DOT PRODUCT

GABOR

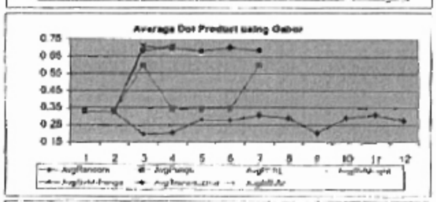
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.92854	0.92854	0.92854	0.92854	0.92854	0.92854	0.92854
1	0.79147	0.79147	0.79147	0.79147	0.79147	0.79147	0.79147
2	0.8173	0.70379	0.73733	0.72587	0.74096	0.72587	0.77987
3	0.86981	0.69643	0.7098	0.72452	0.73374	0.73944	0.76626
4	0.80749	0.7098	0.69054	0.73212		0.72029	
5	0.83833	0.69643		0.72452		0.73944	
6	0.85873	0.70379				0.72587	
7	0.90639						
8	0.76967						
9	0.90639						
10	0.85873						
11	0.83833						



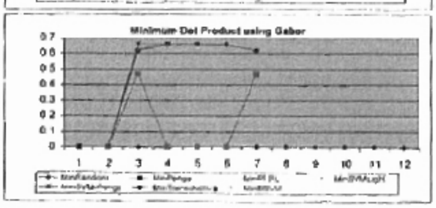
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.33109	0.33109	0.33109	0.33109	0.33109	0.33109	0.33109
1	0.32784	0.32784	0.32784	0.32784	0.32784	0.32784	0.32784
2	0.19848	0.59825	0.69375	0.68638	0.70626	0.68638	0.69652
3	0.20613	0.34367	0.67778	0.68945	0.70177	0.70118	0.71079
4	0.28244	0.34109	0.69652	0.70626		0.6826	
5	0.2794	0.34362		0.68945		0.70118	
6	0.30864	0.59825				0.68638	
7	0.29245						
8	0.20476						
9	0.29245						
10	0.30864						
11	0.2794						



MINIMUM VALUE

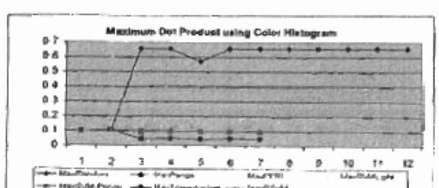
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.46859	0.64973	0.61907	0.66181	0.61907	0.62827
3	0	0	0.65181	0.63367	0.66106	0.6611	0.65406
4	0	0	0.64943	0.65333		0.65031	
5	0	0		0.63367		0.6615	
6	0	0.46859				0.61907	
7	0						
8	0						
9	0						
10	0						
11	0						



COLOR HISTOGRAM

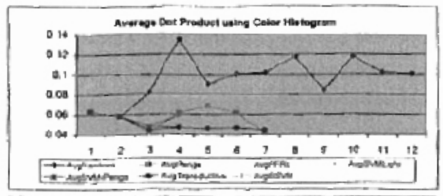
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.0968	0.0968	0.0968	0.0968	0.0968	0.0968	0.0968
1	0.10871	0.10871	0.10871	0.10871	0.10871	0.10871	0.10871
2	0.65598	0.09492	0.05178	0.05037	0.04923	0.05037	0.10877
3	0.65598	0.0968	0.04601	0.46762	0.0491	0.0521	0.10871
4	0.5721	0.0968	0.04618	0.46248		0.04724	
5	0.65598	0.0968		0.46762		0.0521	
6	0.65598	0.09492				0.05037	
7	0.65598						
8	0.65598						
9	0.65598						
10	0.65598						
11	0.65598						



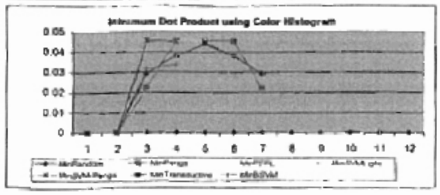
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.06274	0.06274	0.06274	0.06274	0.06274	0.06274	0.06274
1	0.05785	0.05785	0.05785	0.05785	0.05785	0.05785	0.05785
2	0.06229	0.04164	0.04625	0.04407	0.047	0.04407	0.04742
3	0.13514	0.06107	0.04574	0.0681	0.04708	0.0464	0.05834
4	0.09002	0.06854	0.04547	0.06778		0.04547	
5	0.10058	0.06107		0.0681		0.0464	
6	0.10148	0.04164				0.04407	
7	0.11735						
8	0.0837						
9	0.11735						
10	0.10148						
11	0.10058						



MINIMUM VALUE

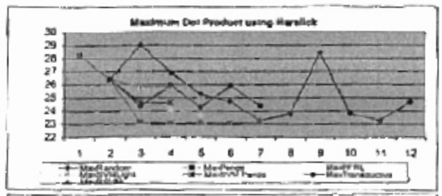
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0.02204	0.04516	0.02909	0.04517	0.02909	0.03137
3	0	0.04513	0.04516	0.02696	0.04507	0.03801	0.03365
4	0	0.04514	0.04507	0.04293		0.04396	
5	0	0.04513		0.02696		0.03801	
6	0	0.02204				0.02909	
7	0						
8	0						
9	0						
10	0						
11	0						



HARALICK

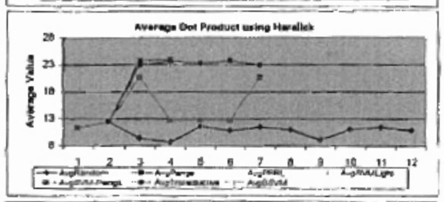
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	28.2376	28.2376	28.2376	28.2376	28.2376	28.2376	28.2376
1	26.3981	26.3981	26.3981	26.3981	26.3981	26.3981	26.3981
2	29.0125	23.1501	25.6603	24.3616	24.6864	24.3616	25.6004
3	26.8723	23.0533	24.1209	24.4179	24.594	25.8119	25.8156
4	25.2607	23.0719	23.7299	25.0322		24.2719	
5	24.6885	23.0533		24.4179		25.8119	
6	23.2374	23.1501				24.3616	
7	23.7730						
8	28.3958						
9	23.7739						
10	23.2374						
11	24.6885						



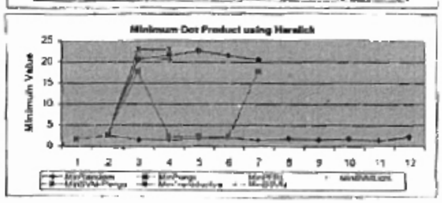
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	11.3415	11.3415	11.3415	11.3415	11.3415	11.3415	11.3415
1	12.4321	12.4321	12.4321	12.4321	12.4321	12.4321	12.4321
2	9.30227	20.6101	23.5253	22.5636	23.7166	22.5636	23.2145
3	8.70519	12.6141	23.3582	22.6898	23.7727	23.6374	23.0606
4	11.5699	12.6335	23.2814	23.6436		23.1962	
5	10.7914	12.6141		22.6898		23.6374	
6	11.4138	20.6101				22.5636	
7	10.9605						
8	9.07737						
9	10.9605						
10	11.4138						
11	10.7914						



MINIMUM VALUE

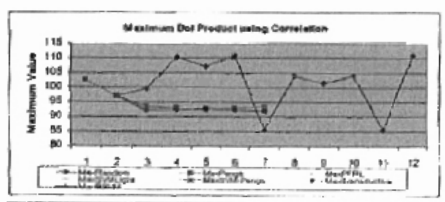
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	1.58075	1.58075	1.58075	1.58075	1.58075	1.58075	1.58075
1	2.53734	2.53734	2.53734	2.53734	2.53734	2.53734	2.53734
2	1.4807	17.7282	22.8533	20.4654	22.8905	20.4654	21.0338
3	1.42226	2.24423	22.9269	19.8249	22.7918	21.583	20.5161
4	1.76054	2.28397	22.852	21.9159		22.5499	
5	2.12962	2.24423		19.8249		21.583	
6	1.42226	17.7282				20.4654	
7	1.79533						
8	1.53445						
9	1.79533						
10	1.42226						
11	2.12962						



CORRELATION

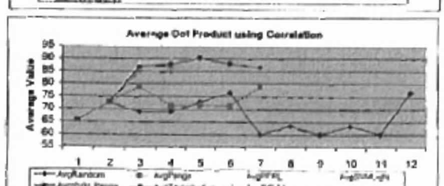
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	102.559	102.559	102.559	102.559	102.559	102.559	102.559
1	96.9715	96.9715	96.9715	96.9715	96.9715	96.9715	96.9715
2	99.4273	93.367	91.8829	91.856	93.367	91.856	92.3385
3	110.34	92.894	92.7205	99.0208	92.057	92.3477	93.1712
4	107.116	92.4811	93.695	90.9402		92.7774	
5	110.898	92.894		99.0208		92.3477	
6	85.3621	93.367				91.856	
7	104.02						
8	101.336						
9	104.02						
10	85.3621						
11	110.898						



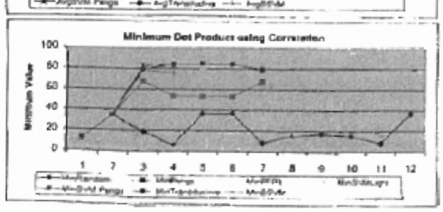
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	65.4077	65.4077	65.4077	65.4077	65.4077	65.4077	65.4077
1	72.7341	72.7341	72.7341	72.7341	72.7341	72.7341	72.7341
2	68.7284	78.8964	88.7415	86.7166	86.7939	86.7166	86.0715
3	68.8294	71.2805	89.2308	88.8382	87.1001	88.0361	84.6483
4	72.5966	71.6297	90.1116	87.035		90.1264	
5	76.5056	71.2805		88.8382		88.0361	
6	59.9158	78.8964				86.7166	
7	63.1791						
8	59.9761						
9	63.1791						
10	59.9158						
11	76.5056						



MINIMUM VALUE

Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	11.8974	11.8974	11.8974	11.8974	11.8974	11.8974	11.8974
1	34.7799	34.7799	34.7799	34.7799	34.7799	34.7799	34.7799
2	18.5121	67.3354	82.096	78.9129	82.413	78.9129	78.0239
3	5.98515	52.9059	86.2468	74.5855	83.2241	84.1776	75.35
4	38.2807	52.888	85.6987	78.6834		84.6082	
5	36.6019	52.9059		74.5855		84.1776	
6	8.38395	67.3354				78.9129	
7	15.1567						
8	17.9145						
9	15.1567						
10	8.38395						
11	36.6019						



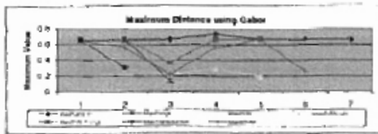
DATASET: TEMPLATEREALOBJVASE

1 EUCLIDEAN DISTANCE

GABOR

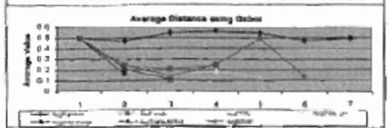
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.66126	0.66126	0.66126	0.66126	0.66126	0.66126	0.66126
1	0.66126	0.66126	0.28621	0.66126	0.66126	0.3007	0.55517
2	0.66126	0.38411	0.20625	0.25516	0.12937		0.2141
3	0.72284	0.66126	0.28621				0.55517
4	0.66126	0.66126	0.18929				0.66126
5	0.66126						0.25502
6	0.66126						



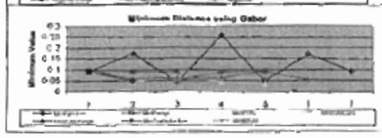
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.49429	0.49429	0.49429	0.49429	0.49429	0.49429	0.49429
1	0.47178	0.23931	0.16812	0.2878	0.21358	0.16457	0.24364
2	0.54083	0.20771	0.15513	0.13617	0.10299		0.14072
3	0.56253	0.23931	0.16817				0.24364
4	0.54083	0.49429	0.13469				0.49429
5	0.47178						0.13543
6	0.49429						



MINIMUM VALUE

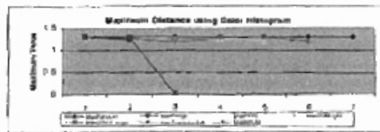
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.092	0.092	0.092	0.092	0.092	0.092	0.092
1	0.17249	0.08894	0.04602	0.08894	0.08894	0.04626	0.05778
2	0.04361	0.04829	0.08586	0.0515	0.08968		0.05865
3	0.29798	0.08894	0.04802				0.05778
4	0.04361	0.092	0.03535				0.092
5	0.17249						0.05049
6	0.092						



COLOR HISTOGRAM

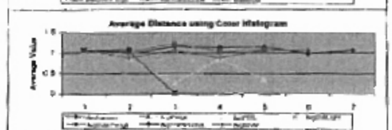
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	1.29955	1.29955	1.29955	1.29955	1.29955	1.29955	1.29955
1	1.29955	1.28258	1.24622	1.29955	1.28258	1.23138	1.25489
2	1.29955	1.24461	1.20586	1.23149	0.01484		1.18252
3	1.29955	1.28258	1.24622				1.25489
4	1.29955	1.29955	1.20046				1.29955
5	1.29955						1.17828
6	1.29955						



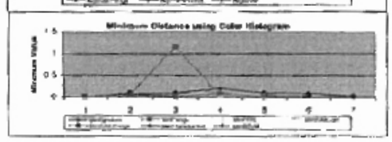
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	1.06202	1.06202	1.06202	1.06202	1.06202	1.06202	1.06202
1	0.97419	1.02925	0.858	0.93641	1.02582	1.07327	0.87291
2	1.14111	1.18827	0.26441	0.83134	0.01232		1.05252
3	1.12641	1.02925	0.858				0.87291
4	1.14111	1.06202	0.36478				1.06202
5	0.97419						1.04569
6	1.06202						



MINIMUM VALUE

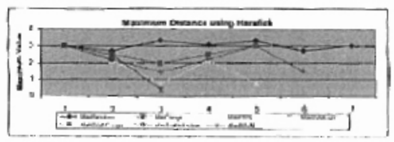
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.01536	0.01536	0.01536	0.01536	0.01536	0.01536	0.01536
1	0.07632	0.05731	0.04104	0.05731	0.05731	0.00376	0.0779
2	0.08784	1.1481	0.01882	0.02728	0.00869		0.01479
3	0.19298	0.05731	0.04104				0.0779
4	0.08784	0.01536	0.00948				0.01536
5	0.07632						0.01623
6	0.01536						



HARALICK

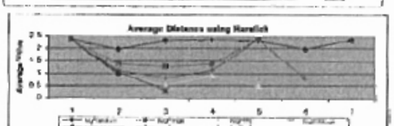
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	3.00762	3.00762	3.00762	3.00762	3.00762	3.00762	3.00762
1	2.70868	2.46638	2.12138	2.46638	2.46638	2.17304	2.19553
2	3.32046	1.94714	0.73189	1.41582	0.3481		1.41717
3	3.05738	2.46638	2.12138				2.19553
4	3.32048	3.00762	0.75412				3.00762
5	2.70868						1.88787
6	3.00762						



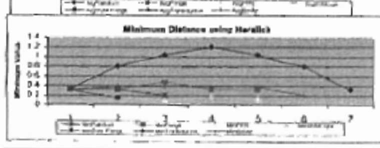
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	2.34907	2.34907	2.34907	2.34907	2.34907	2.34907	2.34907
1	1.9691	1.3828	0.94423	1.30583	1.35496	0.98877	1.12501
2	2.29643	1.28172	0.49457	0.78232	0.31392		0.81902
3	2.33537	1.3828	0.94423				1.12501
4	2.29643	2.34907	0.48676				2.34907
5	1.9691						0.81456
6	2.34907						



MINIMUM VALUE

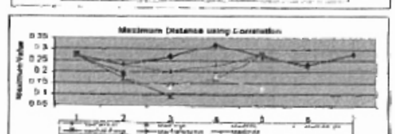
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.3211	0.3211	0.3211	0.3211	0.3211	0.3211	0.3211
1	0.79621	0.32544	0.18841	0.32544	0.32544	0.15484	0.3777
2	1.04889	0.47717	0.10517	0.20306	0.21333		0.37921
3	1.20948	0.32544	0.18841				0.3777
4	1.04889	0.3211	0.14721				0.37921
5	0.79621						0.21289
6	0.3211						



CORRELATION

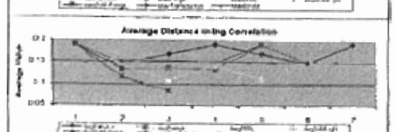
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.27374	0.27374	0.27374	0.27374	0.27374	0.27374	0.27374
1	0.23223	0.16949	0.17911	0.20133	0.16949	0.16981	0.22748
2	0.28592	0.14278	0.13147	0.17474	0.09086		0.16967
3	0.31784	0.16948	0.17811				0.22748
4	0.28592	0.27374	0.1239				0.27374
5	0.23223						0.22096
6	0.27374						



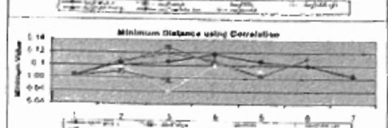
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.15989	0.16989	0.16989	0.16989	0.16989	0.16989	0.16989
1	0.14848	0.13487	0.14321	0.14718	0.11541	0.13555	0.14924
2	0.16948	0.13706	0.10832	0.13153	0.08383		0.1526
3	0.19609	0.13487	0.14321				0.14924
4	0.16948	0.16989	0.11109				0.16989
5	0.14848						0.1516
6	0.16989						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.0637	0.0637	0.0637	0.0637	0.0637	0.0637	0.0637
1	0.09985	0.10303	0.09992	0.10303	0.09089	0.10392	0.10758
2	0.10637	0.12893	0.08061	0.08394	0.07681		0.11807
3	0.11711	0.10303	0.09992				0.10758
4	0.10637	0.0637	0.0619				0.0637
5	0.09985						0.11041
6	0.0637						

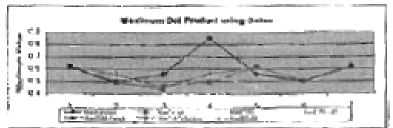


2 DOT PRODUCT

GABOR

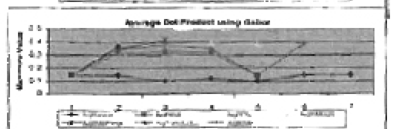
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.61592	0.61592	0.61592	0.61592	0.61592	0.61592	0.61592
1	0.50084	0.48868	0.55398	0.50338	0.49088	0.4951	0.55844
2	0.55754	0.45894	0.4113	0.44297	0.43173		0.45287
3	0.54928	0.40060	0.55398				0.55844
4	0.55754	0.61592	0.45985				0.61592
5	0.50084						0.502
6	0.61592						



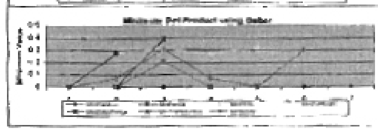
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317
1	0.14488	0.31024	0.39622	0.28477	0.3058	0.38391	0.34468
2	0.10087	0.32505	0.37088	0.3884	0.40591		0.36867
3	0.11953	0.31524	0.39622				0.34468
4	0.10087	0.14317	0.38725				0.14317
5	0.14449						0.38535
6	0.14317						



MINIMUM VALUE

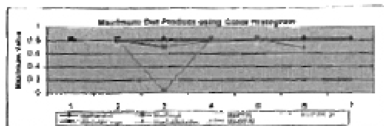
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0	0.27778	0	0	0.27581	0.07119
2	0	0.20602	0.31348	0.27319	0.39448		0.30739
3	0	0	0.27228				0.07119
4	0	0	0.325				0
5	0						0.29725
6	0						



COLOR HISTOGRAM

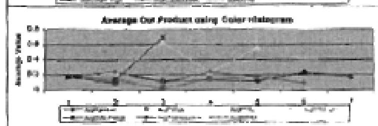
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.82074	0.82074	0.82074	0.82074	0.82074	0.82074	0.82074
1	0.82074	0.82074	0.79405	0.82074	0.82074	0.78911	0.7916
2	0.82074	0.82725	0.75537	0.71426	0.69179		0.70208
3	0.82074	0.82074	0.75405				0.7916
4	0.82074	0.82074	0.75801				0.82074
5	0.82074						0.88339
6	0.82074						



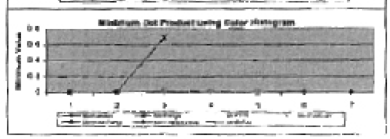
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.17385	0.17385	0.17385	0.17385	0.17385	0.17385	0.17385
1	0.22991	0.13592	0.22971	0.20624	0.13212	0.08277	0.28123
2	0.11624	0.02195	0.62845	0.22299	0.88839		0.08882
3	0.13403	0.17592	0.22971				0.28123
4	0.11624	0.17385	0.55349				0.17385
5	0.22991						0.08847
6	0.17385						



MINIMUM VALUE

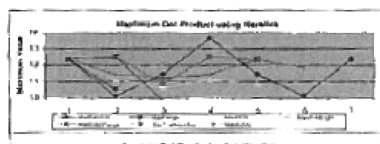
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0	0	0	0	0	0	0
1	0	0.00236	0.00565	0	0.00236	0.00765	0.008
2	0	0.01327	0.01817	0.00643	0.68542		0.01374
3	0	0.00236	0.00041				0.008
4	0	0	0.01094				0
5	0						0.0141
6	0						



HARALICK

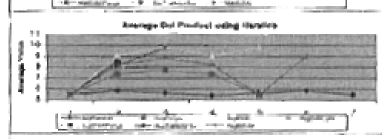
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	12.3655	12.3655	12.3655	12.3655	12.3655	12.3655	12.3655
1	10.1156	12.5064	11.4209	12.5064	12.5064	10.5137	11.4295
2	11.4304	10.8741	10.584	12.0013	9.85363		11.1771
3	13.567	12.5064	11.1209				11.4295
4	11.4304	12.3655	10.8458				12.3655
5	10.1156						11.8305
6	12.3655						



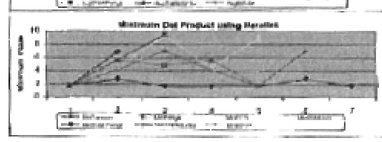
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	5.45294	5.45294	5.45294	5.45294	5.45294	5.45294	5.45294
1	5.81565	7.3878	8.00591	7.72189	8.18151	6.48757	6.20694
2	5.81226	7.07347	9.86242	8.74875	8.71411		6.80889
3	5.40421	7.3878	8.00591				6.20694
4	5.81226	5.45294	8.77546				5.45294
5	5.81565						5.95151
6	5.45294						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	1.71049	1.71049	1.71049	1.71049	1.71049	1.71049	1.71049
1	2.77367	5.62102	4.51945	4.67674	5.62102	6.7503	4.18175
2	1.69706	4.88066	9.27678	7.23059	6.47742		6.87675
3	1.43767	5.62102	4.51945				4.18175
4	1.69706	1.71049	5.90669				1.71049
5	2.77367						1.61677
6	1.71049						



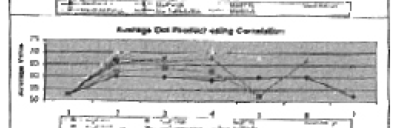
CORRELATION

MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	88.9471	88.9471	88.9471	88.9471	88.9471	88.9471	88.9471
1	85.0347	78.6628	80.1584	78.6628	78.6628	71.5736	83.4782
2	88.5631	71.8005	70.5857	71.843	68.739		71.0521
3	85.0283	74.6620	80.1584				83.4782
4	88.5631	88.9471	70.2428				88.9471
5	85.0347						72.8858
6	88.9471						

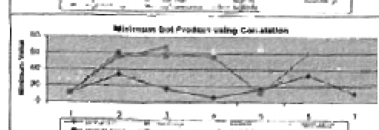
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	52.5375	52.5375	52.5375	52.5375	52.5375	52.5375	52.5375
1	60.2011	62.2326	70.4076	68.7993	65.168	68.5105	67.6866
2	59.8752	63.7817	68.3222	66.7427	67.5581		65.8788
3	59.4715	62.2326	70.4076				67.6866
4	59.8752	52.5375	68.1661				52.5375
5	60.2011						66.6225
6	52.5375						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	10.9712	10.9712	10.9712	10.9712	10.9712	10.9712	10.9712
1	33.3897	55.4213	62.6254	55.4213	55.4213	60.8111	54.6416
2	16.2867	56.5377	61.9905	61.0889	67.16		61.3654
3	5.44881	55.4213	62.6254				54.6446
4	16.2867	10.9712	67.1617				10.9712
5	33.3897						58.7771
6	10.9712						



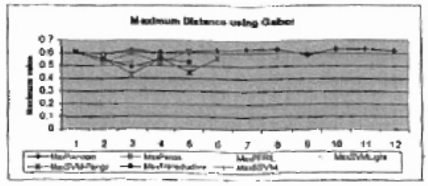
DATASET: TEMPLATEJOB/

1 EUCLIDEAN DISTANCE

GABOR

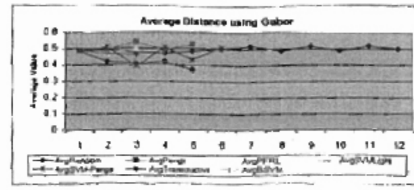
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	0.60705	0.60705	0.60705	0.60705	0.60705	0.60705	0.60705
1	0.58851	0.52148	0.5755	0.52123	0.5578	0.55433	0.53056
2	0.61823	0.59527	0.51479	0.51984	0.42707	0.48831	0.52509
3	0.59783	0.52148			0.5578	0.55433	
4	0.60573	0.61341			0.44943	0.52931	
5	0.61962				0.5578		
6	0.63164						
7	0.63222						
8	0.589						
9	0.63222						
10	0.63164						
11	0.61962						



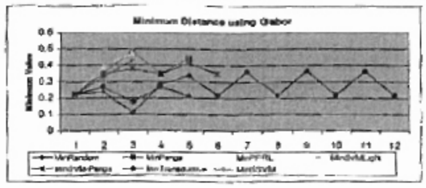
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.48565	0.48565	0.48565	0.48565	0.48565	0.48565	0.48565
1	0.49331	0.48883	0.4727	0.42766	0.507	0.42188	0.47017
2	0.47617	0.54376	0.49698	0.42545	0.39487	0.40578	0.46145
3	0.47317	0.48883			0.507	0.42188	
4	0.48327	0.52976			0.43452	0.37101	
5	0.49882				0.507		
6	0.51686						
7	0.48832						
8	0.51595						
9	0.48832						
10	0.51686						
11	0.49882						



MINIMUM VALUE

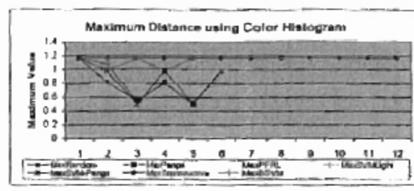
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.22263	0.22263	0.22263	0.22263	0.22263	0.22263	0.22263
1	0.23626	0.34534	0.38693	0.25609	0.34534	0.2695	0.32431
2	0.10872	0.48497	0.47486	0.24073	0.37828	0.17541	0.42926
3	0.28223	0.34534			0.34534	0.2696	
4	0.33627	0.44253			0.41281	0.21083	
5	0.21722				0.34534		
6	0.36184						
7	0.21583						
8	0.36516						
9	0.21583						
10	0.36184						
11	0.21722						



COLOR HISTOGRAM

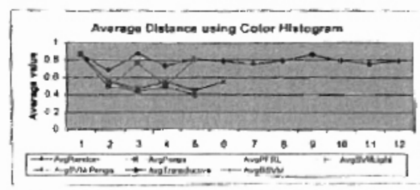
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	1.16483	1.16483	1.16483	1.16483	1.16483	1.16483	1.16483
1	1.16483	0.97992	0.84548	1.14842	0.97992	0.81028	1.08402
2	1.16483	1.16152	0.47843	0.71598	0.48734	0.5437	0.61651
3	1.16483	0.97992			0.97992	0.81028	
4	1.16483	1.16152			0.50616	0.49677	
5	1.16483				0.97992		
6	1.16152						
7	1.16483						
8	1.16483						
9	1.16483						
10	1.16152						
11	1.16483						



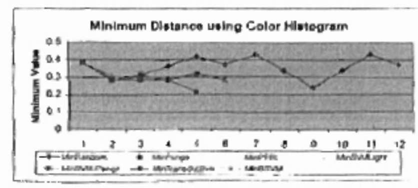
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	0.86422	0.86422	0.86422	0.86422	0.86422	0.86422	0.86422
1	0.68168	0.49142	0.52152	0.58098	0.55013	0.49173	0.55856
2	0.87367	0.76401	0.39058	0.44118	0.46698	0.43313	0.41573
3	0.72752	0.49142			0.55013	0.49173	
4	0.81309	0.80454			0.44890	0.39509	
5	0.78721				0.55013		
6	0.75394						
7	0.79238						
8	0.86151						
9	0.79238						
10	0.75394						
11	0.78721						



MINIMUM VALUE

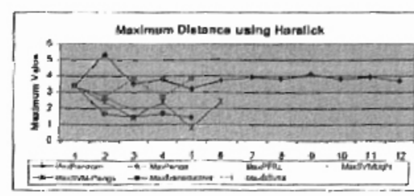
Time	MinRandom	MinPenga	MinPFRL	MinSVMLight	MinSVM-Penga	MinTransductive	MinBSVM
0	0.38445	0.38445	0.38445	0.38445	0.38445	0.38445	0.38445
1	0.29623	0.28233	0.29962	0.28233	0.28233	0.28839	0.30475
2	0.30694	0.25872	0.28447	0.28485	0.31109	0.28288	0.28432
3	0.36172	0.28233			0.28233	0.28839	
4	0.41645	0.31704			0.31701	0.21178	
5	0.37004				0.28233		
6	0.4287						
7	0.33811						
8	0.23967						
9	0.33811						
10	0.4287						
11	0.37004						



HARALICK

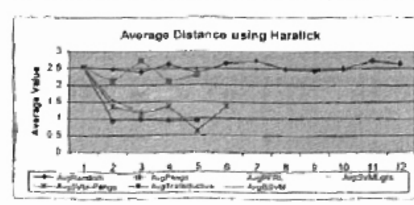
MAXIMUM VALUE

Time	MaxRandom	MaxPenga	MaxPFRL	MaxSVMLight	MaxSVM-Penga	MaxTransductive	MaxBSVM
0	3.38896	3.38896	3.38896	3.38896	3.38896	3.38896	3.38896
1	5.30071	2.69133	2.33861	2.39949	2.39949	1.66813	2.71376
2	3.51544	3.84016	1.52967	1.93435	1.43121	1.47485	1.68923
3	3.7827	2.69133			2.39949	1.66813	
4	3.18157	3.81887			0.77446	1.42161	
5	3.70814				2.39949		
6	3.93524						
7	3.81394						
8	4.10768						
9	3.81394						
10	3.93524						
11	3.70814						



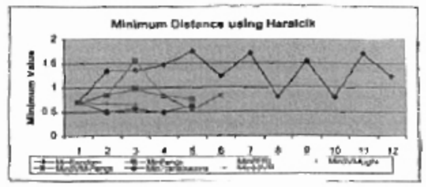
AVERAGE VALUE

Time	AvgRandom	AvgPenga	AvgPFRL	AvgSVMLight	AvgSVM-Penga	AvgTransductive	AvgBSVM
0	2.52009	2.52009	2.52009	2.52009	2.52009	2.52009	2.52009
1	2.46212	2.11314	1.44084	1.39738	1.356	0.93645	1.52741
2	2.3775	2.71128	1.27946	1.10128	1.14569	0.87333	1.21776
3	2.69478	2.11314			1.359	0.93645	
4	2.35172	2.29122			0.62754	0.93456	
5	2.63666				1.359		
6	2.71132						
7	2.47151						
8	2.42597						
9	2.47151						
10	2.71132						
11	2.63666						



MINIMUM VALUE

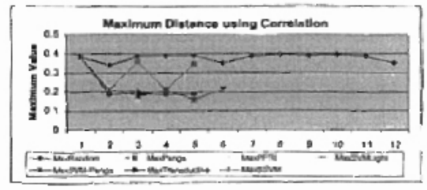
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.69235	0.69235	0.69235	0.69235	0.69235	0.69235	0.69235
1	1.33208	0.82713	0.55653	0.65551	0.82713	0.46657	0.69105
2	1.3505	1.55619	0.67793	0.67088	0.97172	0.55651	0.65903
3	1.46501	0.82713			0.82713	0.48657	
4	1.74047	0.74288			0.54135	0.8192	
5	1.23165				0.82713		
6	1.69496						
7	0.79693						
8	1.52922						
9	0.79693						
10	1.69496						
11	1.23165						



CORRELATION

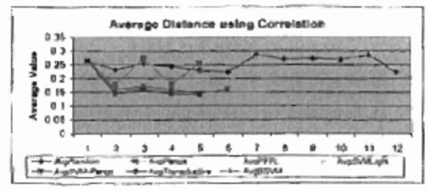
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.3842	0.3842	0.3842	0.3842	0.3842	0.3842	0.3842
1	0.33883	0.20975	0.22116	0.20975	0.20975	0.18592	0.2003
2	0.38707	0.35796	0.16396	0.19196	0.17968	0.19249	0.20715
3	0.38759	0.20975			0.20975	0.18592	
4	0.38859	0.36427			0.15676	0.18573	
5	0.3501				0.20975		
6	0.38692						
7	0.39544						
8	0.38772						
9	0.39544						
10	0.38692						
11	0.3501						



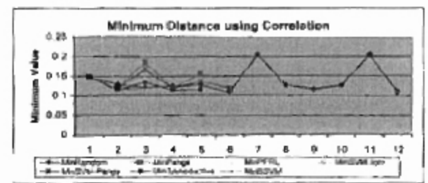
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.26273	0.26273	0.26273	0.26273	0.26273	0.26273	0.26273
1	0.23	0.17819	0.14994	0.15311	0.15929	0.14267	0.14668
2	0.25216	0.27061	0.15242	0.14403	0.17039	0.15728	0.16616
3	0.24199	0.17819			0.15929	0.14267	
4	0.22742	0.25197			0.14301	0.13863	
5	0.22201				0.15929		
6	0.28576						
7	0.26666						
8	0.27044						
9	0.26666						
10	0.28576						
11	0.22201						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.14727	0.14727	0.14727	0.14727	0.14727	0.14727	0.14727
1	0.12686	0.11845	0.114	0.11845	0.11845	0.11469	0.11842
2	0.12115	0.18366	0.14444	0.11382	0.16654	0.1329	0.11946
3	0.12339	0.11845			0.11845	0.11469	
4	0.1265	0.1543			0.1348	0.11491	
5	0.10673				0.11845		
6	0.20444						
7	0.126						
8	0.11605						
9	0.126						
10	0.20444						
11	0.10673						

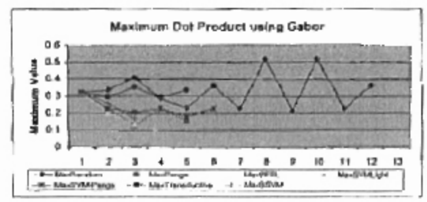


2 DOT PRODUCT

GABOR

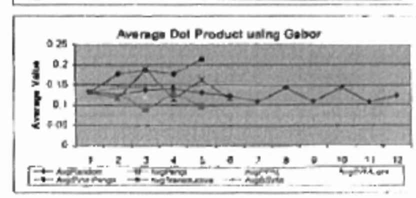
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.32412	0.32412	0.32412	0.32412	0.32412	0.32412	0.32412
1	0.33531	0.22411	0.19687	0.30971	0.22411	0.29321	0.25690
2	0.40978	0.12732	0.13413	0.302	0.20272	0.35244	0.16714
3	0.29482	0.22411			0.22411	0.29321	
4	0.22928	0.15622			0.17778	0.33419	
5	0.3808				0.22411		
6	0.22403						
7	0.51921						
8	0.21038						
9	0.51921						
10	0.22403						
11	0.3608						



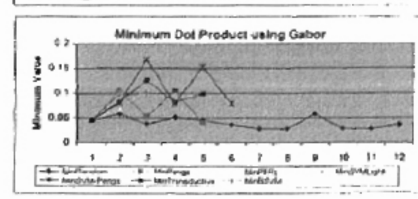
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.13195	0.13195	0.13195	0.13195	0.13195	0.13195	0.13195
1	0.12062	0.12829	0.13726	0.17231	0.11432	0.17698	0.14176
2	0.1369	0.08764	0.11908	0.17061	0.18948	0.18584	0.14451
3	0.14006	0.12829			0.11432	0.17698	
4	0.13129	0.0973			0.16308	0.21322	
5	0.12302				0.11432		
6	0.10772						
7	0.14259						
8	0.10896						
9	0.14259						
10	0.10772						
11	0.12302						



MINIMUM VALUE

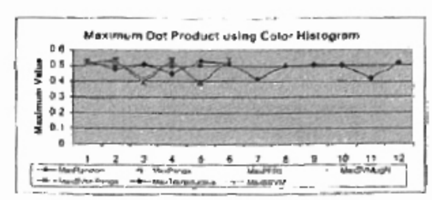
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	0.04469	0.04469	0.04469	0.04469	0.04469	0.04469	0.04469
1	0.05752	0.10374	0.0665	0.10257	0.07867	0.08142	0.09678
2	0.03733	0.05288	0.107	0.10573	0.1668	0.12494	0.1
3	0.06127	0.10374			0.07867	0.08142	
4	0.04566	0.04056			0.15271	0.09855	
5	0.03626				0.07867		
6	0.02813						
7	0.02782						
8	0.05725						
9	0.02782						
10	0.02813						
11	0.03626						



COLOR HISTOGRAM

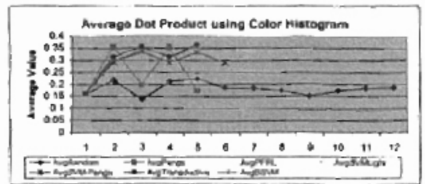
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	0.52291	0.52291	0.52291	0.52291	0.52291	0.52291	0.52291
1	0.47324	0.53111	0.52646	0.53111	0.53111	0.49477	0.52532
2	0.50824	0.41481	0.41515	0.43579	0.39989	0.50526	0.41821
3	0.44982	0.53111			0.53111	0.49477	
4	0.53006	0.38743			0.3917	0.50918	
5	0.51135				0.53111		
6	0.41774						
7	0.50052						
8	0.50394						
9	0.50052						
10	0.41774						
11	0.51135						



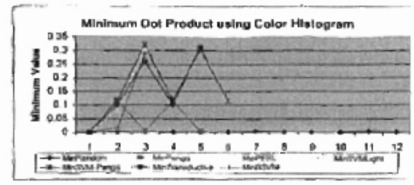
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	0.15934	0 15934	0 15934	0 15934	0.15934	0 15934	0.15934
1	0.21671	0 35424	0 30827	0 30462	0 29068	0 31297	0.28663
2	0 13583	0 19549	0 35496	0 34292	0 334	0.35537	0.33562
3	0 2123	0 35424			0 29098	0 31297	
4	0 22104	0 17278			0 33081	0 36403	
5	0 1656				0 29068		
6	0 18337						
7	0 17378						
8	0 15024						
9	0 17378						
10	0 18337						
11	0 1656						



MINIMUM VALUE

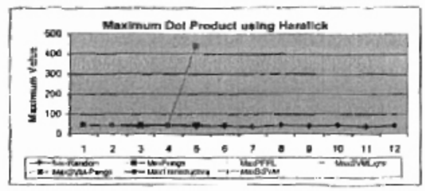
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MaxBSVM
0	0	0	0	0	0	0	0
1	0	0 11465	0 07942	0.00663	0 11465	0 10024	0 01588
2	0	0 00385	0 30658	0 1435	0 32629	0 25919	0.2872
3	0	0 11465			0 11465	0 10024	
4	0	0.00385			0 30619	0 3121	
5	0				0 11465		
6	0.00385						
7	0						
8	0						
9	0						
10	0 00385						
11	0						



HARALICK

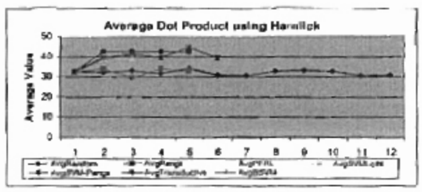
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	46 3872	45.3872	45 3872	45 3872	45 3872	45 3872	45 3872
1	42.2242	43.9826	45 1859	45 2296	43 9826	45 7764	45 3907
2	44 4293	37 2246	44.0192	45 7149	43 3259	45.6824	44 3284
3	41.9049	43 9826			43 9826	45.7764	
4	40 6258	440 564			45.5259	46.5423	
5	41 1135				43 9826		
6	37.0069						
7	45 1179						
8	40.7568						
9	45.1179						
10	37 0069						
11	41.1135						



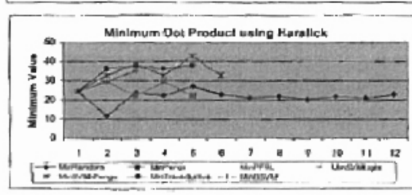
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	32 4061	32 4061	32.4061	32 4061	32 4061	32 4061	32 4061
1	32.2251	33 8913	38.5337	39.4271	39 5455	42 4027	38 3413
2	32 8757	29 5949	39 091	41 4502	41 3922	42 3609	41 057
3	31 5666	33 8913			38 5455	42 4027	
4	33 9495	32,7798			44 4005	42 2866	
5	30 7689				39 5455		
6	30 4613						
7	32 656						
8	33 0696						
9	32,655						
10	30.4613						
11	30 7689						



MINIMUM VALUE

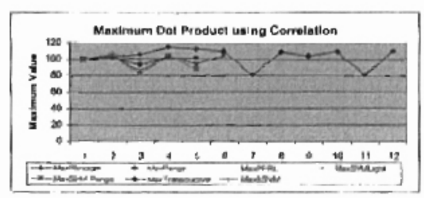
Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	24 4566	24 4566	24 4566	24 4566	24 4566	24 4566	24 4566
1	11 5455	29 4366	31.8249	32 6875	32.6875	36 1878	29 6402
2	23.859	22 0877	38 6038	34 6891	34 5038	37 5603	35 1029
3	22.1745	29.4366			32 6875	36.1878	
4	26.9729	22 2269			42.5263	37 894	
5	22.883				32 6875		
6	20 8917						
7	21 7691						
8	20 0026						
9	21 7691						
10	20 8917						
11	22 883						



CORRELATION

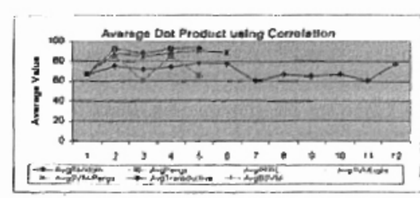
MAXIMUM VALUE

Time	MaxRandom	MaxPengs	MaxPFRL	MaxSVMLight	MaxSVM-Pengs	MaxTransductive	MaxBSVM
0	99 2346	99.2346	99.2346	99.2346	99.2346	99.2346	99 2346
1	102.887	104.393	104 322	106 683	104.393	101 62	106.683
2	106.001	81 8357	89.6481	111 879	86.8353	93.341	98 4343
3	114,278	104 393			104 393	101 62	
4	111.977	83.5011			95.4799	101.434	
5	109 359				104 393		
6	80 7611						
7	108.895						
8	103 956						
9	108.805						
10	80 7611						
11	109 359						



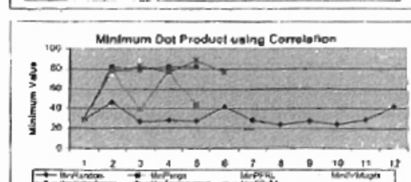
AVERAGE VALUE

Time	AvgRandom	AvgPengs	AvgPFRL	AvgSVMLight	AvgSVM-Pengs	AvgTransductive	AvgBSVM
0	66.7011	66 7011	66.7011	66.7011	66.7011	66.7011	66.7011
1	74 5416	84 8231	90 6013	91 9837	88 3696	92 3769	92 7315
2	71 4417	60.814	88 1684	93 4171	85.0256	87.8817	86.9251
3	73 8212	84 8231			88 3666	92 3769	
4	77 1788	65.5881			90 5849	92 684	
5	77 0687				88 3666		
6	60 3743						
7	66.3138						
8	64.6307						
9	66.3138						
10	60 3743						
11	77 0687						



MINIMUM VALUE

Time	MinRandom	MinPengs	MinPFRL	MinSVMLight	MinSVM-Pengs	MinTransductive	MinBSVM
0	28 8772	28 8772	28 8772	28.8772	28.8772	28.8772	28 8772
1	46 4382	76 529	74 622	76 529	76 529	81 7322	78 2668
2	27 2541	39.1051	87 2476	79 9559	83 6148	79.8091	77 0632
3	28.3144	76 529			76 529	81 7322	
4	27 3387	43.6187			87 6635	81 7535	
5	41 8049				76.529		
6	28.4059						
7	24 1718						
8	27 2805						
9	24 1718						
10	28 4069						
11	41 8049						



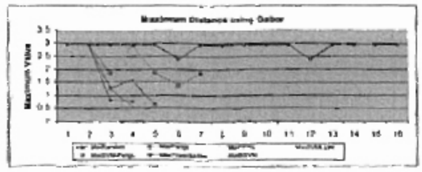
DATASET TEMPLATECOLORING

1 EUCLIDEAN DISTANCE

GABOR

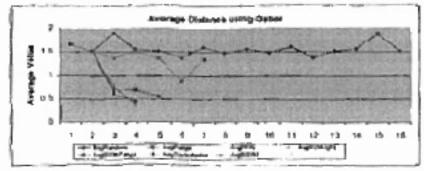
MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPFRL	MaxSVMLight	MaxSVM-Range	MaxTransductive	MaxSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]		[illegible]	[illegible]		
5	[illegible]	[illegible]					
6	[illegible]	[illegible]					
7	[illegible]						
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						



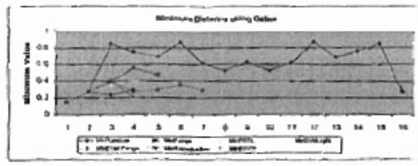
AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPFRL	AvgSVMLight	AvgSVM-Range	AvgTransductive	AvgSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]		[illegible]	[illegible]		
5	[illegible]	[illegible]					
6	[illegible]	[illegible]					
7	[illegible]						
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						



MINIMUM VALUE

Time	MinRandom	MinRange	MinPFRL	MinSVMLight	MinSVM-Range	MinTransductive	MinSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]		[illegible]			
5	[illegible]	[illegible]					
6	[illegible]	[illegible]					
7	[illegible]						
8	[illegible]						
9	[illegible]						
10	[illegible]						
11	[illegible]						
12	[illegible]						
13	[illegible]						
14	[illegible]						
15	[illegible]						



COLOR HISTOGRAM

MAXIMUM VALUE

Time	MaxRandom	MaxRange	MaxPFRL	MaxSVMLight	MaxSVM-Range	MaxTransductive	MaxSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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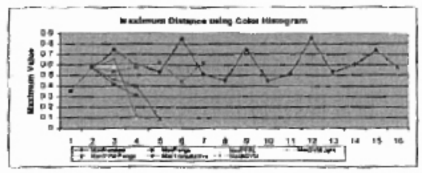

AVERAGE VALUE

Time	AvgRandom	AvgRange	AvgPFRL	AvgSVMLight	AvgSVM-Range	AvgTransductive	AvgSVM
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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4	[illegible]	[illegible]		[illegible]	[illegible]		
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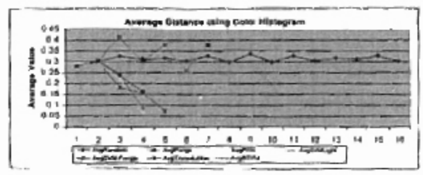

MINIMUM VALUE

Time	MinRandom	MinRange	MinPFRL	MinSVMLight	MinSVM-Range	MinTransductive	MinSVM
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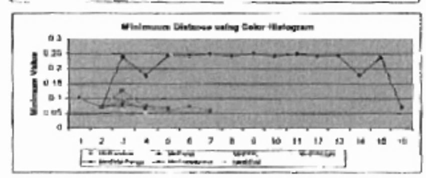

HARALICK

MAXIMUM VALUE

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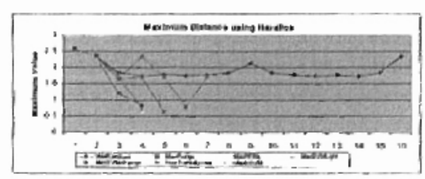

AVERAGE VALUE

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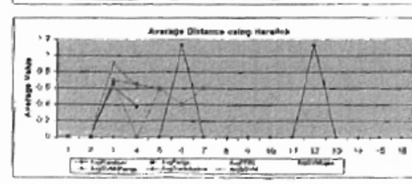

MINIMUM VALUE

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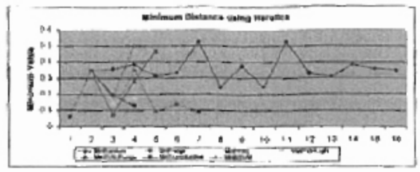

CORRELATION

MAXIMUM VALUE

Time	MaxRandom	MaxPRange	MaxPFRL	MaxSVMLight	MaxSVMRange	MaxTransductive	MaxSSVM
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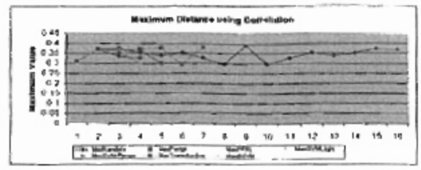

AVERAGE VALUE

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3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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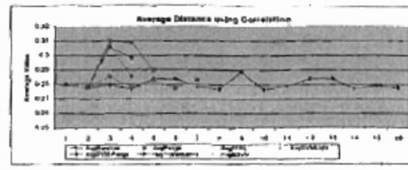

MINIMUM VALUE

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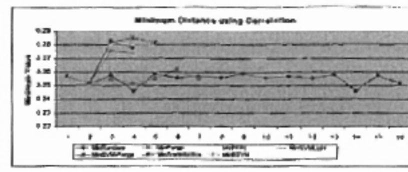

7. DOT PRODUCT

GABOR

MAXIMUM VALUE

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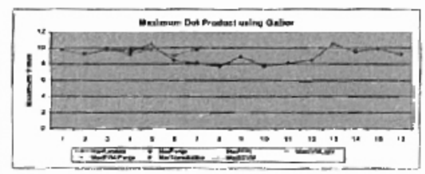

AVERAGE VALUE

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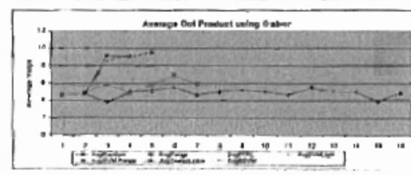

MINIMUM VALUE

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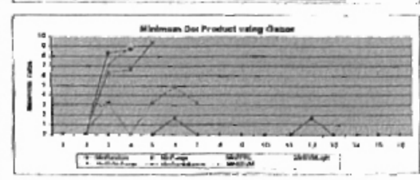

COLOR HISTOGRAM

MAXIMUM VALUE

Time	MaxRandom	MaxPRange	MaxPFRL	MaxSVMLight	MaxSVMRange	MaxTransductive	MaxSSVM
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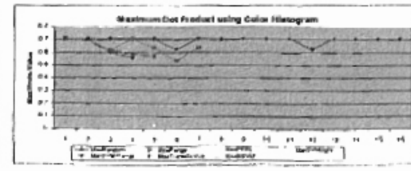

AVERAGE VALUE

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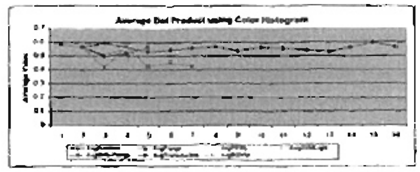

MINIMUM VALUE

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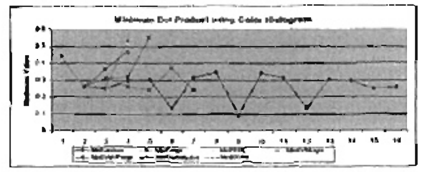

HARALICK

MAXIMUM VALUE

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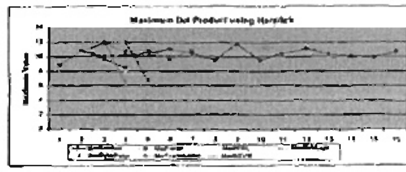

AVERAGE VALUE

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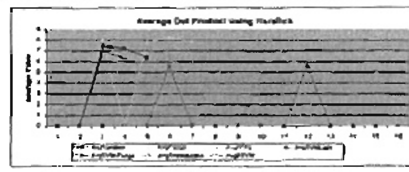

MINIMUM VALUE

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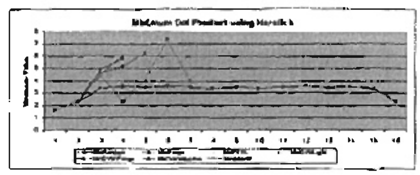

CORRELATION

MAXIMUM VALUE

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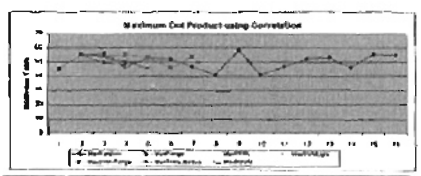
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



AVERAGE VALUE

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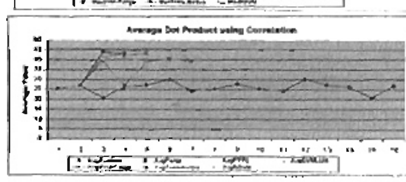

MINIMUM VALUE

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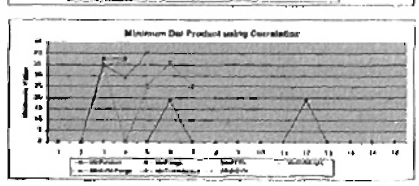


Appendix D

EUCLIDEAN DISTANCE AND SIMILARITY VALUE DISTRIBUTION TABLES AND FIGURES

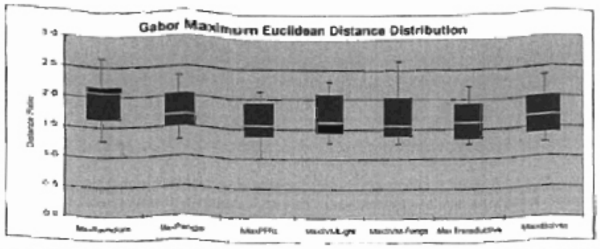
REAL OBJECT

EUCLIDEAN DISTANCE

MAXIMUM VALUE

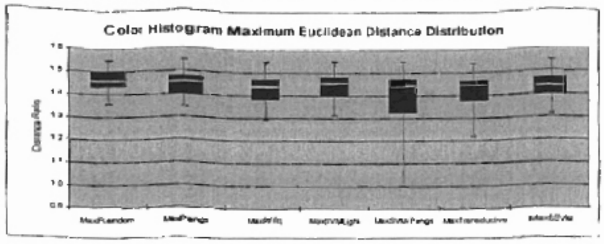
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	2.1980	2.6358	1.2714	1.6180	2.0749	107.4940	115.9831	150.5011
MaxPenge	2.0354	2.3458	1.2714	1.4903	1.6192	61.9137	100.5426	134.5802
MaxPFRL	1.9307	2.1257	1.0000	1.3740	1.5213	62.1258	80.0727	117.5731
MaxSVMLight	2.0015	2.2969	1.2714	1.4431	1.6079	00.7681	109.1527	138.6923
MaxSVM-Penge	2.0354	2.6358	1.2540	1.3941	1.5210	52.1029	103.5428	153.5811
MaxTransductive	1.9161	2.2116	1.2479	1.3340	1.6079	80.7601	81.6187	121.5852
MaxBSVM	2.0128	2.3628	1.2078	1.3962	1.6224	82.3400	101.2716	136.2795



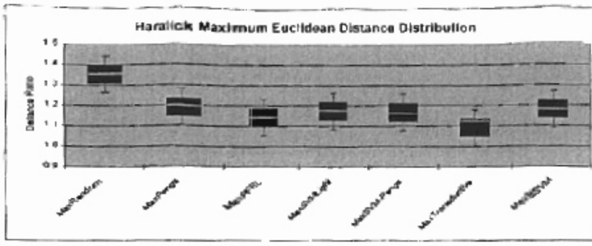
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.4968	1.5491	1.3559	1.4332	1.4657	46.8663	45.6846	54.9117
MaxPenge	1.4749	1.5491	1.3420	1.3962	1.4657	46.8662	47.4619	54.9117
MaxPFRL	1.4721	1.5476	1.2930	1.3529	1.4440	44.4756	47.3071	54.7651
MaxSVMLight	1.4831	1.5491	1.3132	1.3588	1.4657	46.8660	48.3528	54.9117
MaxSVM-Penge	1.4724	1.5491	1.0000	1.3239	1.4554	45.4377	47.2583	54.9117
MaxTransductive	1.4658	1.5413	1.2178	1.3768	1.4520	48.1957	46.5640	54.1269
MaxBSVM	1.4724	1.5491	1.3105	1.3959	1.4505	45.0497	47.2583	54.9117



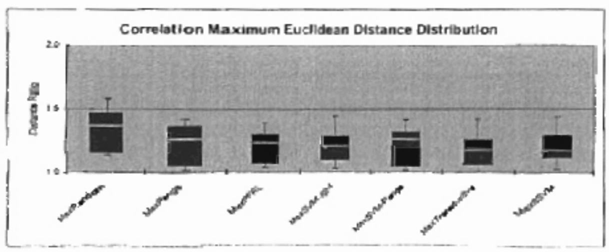
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.3569	1.4438	1.2644	1.3050	1.3540	31.1866	39.5880	44.3829
MaxPenge	1.2391	1.2800	1.1003	1.1482	1.1903	19.0175	23.5112	26.0365
MaxPFRL	1.1667	1.2317	1.0519	1.0968	1.1418	14.1611	19.6747	23.1683
MaxSVMLight	1.2168	1.2607	1.0838	1.1289	1.1736	17.3815	21.8751	26.3657
MaxSVM-Penge	1.2173	1.2575	1.0777	1.1237	1.1576	15.7609	21.2542	26.7478
MaxTransductive	1.1348	1.1797	1.0000	1.0446	1.0899	8.9872	13.4808	17.9745
MaxBSVM	1.2227	1.2670	1.3879	1.1326	1.1777	17.7757	22.2674	26.7610



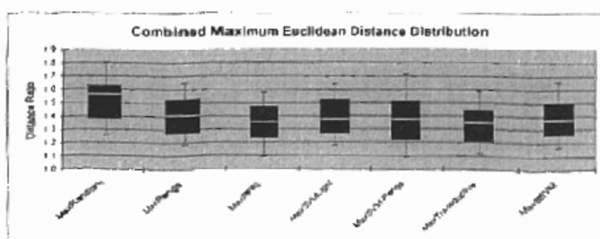
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.4677	1.5018	1.1382	1.1543	1.3093	30.6349	46.7710	58.4756
MaxPenge	1.3632	1.4163	1.0134	1.0472	1.2231	22.3083	36.3172	41.6260
MaxPFRL	1.2957	1.3898	1.0354	1.0694	1.2229	22.7950	29.5666	38.4050
MaxSVMLight	1.2959	1.4415	1.0204	1.0644	1.1632	16.3248	28.6883	44.1455
MaxSVM-Penge	1.3219	1.4163	1.0134	1.0412	1.2231	22.3083	32.1645	41.6260
MaxTransductive	1.2568	1.4188	1.0000	1.0599	1.1488	14.6639	25.6780	41.6806
MaxBSVM	1.2972	1.4388	1.0292	1.1167	1.1456	14.5643	29.7182	43.8776



ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

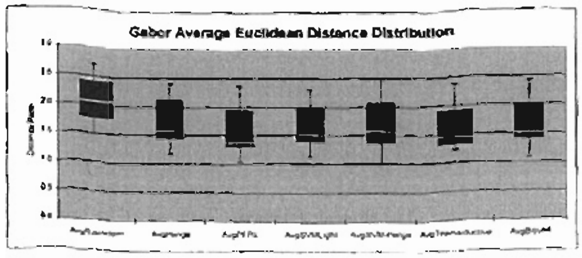
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.6306	1.8035	1.2554	1.3788	1.5510	42.7048	55.6032	65.8601
MaxPenge	1.5271	1.6478	1.1810	1.2702	1.3753	25.3090	40.5127	51.6165
MaxPFRL	1.4723	1.5725	1.0651	1.2358	1.3327	22.4207	35.4005	44.6051
MaxSVMLight	1.5201	1.6378	1.1142	1.2652	1.3549	24.4544	39.8519	50.5504
MaxSVM-Penge	1.5156	1.7147	1.0988	1.2195	1.3418	23.4564	38.8809	57.7663
MaxTransductive	1.4633	1.5679	1.1163	1.2030	1.3271	22.1096	32.8013	46.8644
MaxBSVM	1.5013	1.6548	1.1563	1.2609	1.3451	24.1340	38.1302	52.2603



AVERAGE VALUE

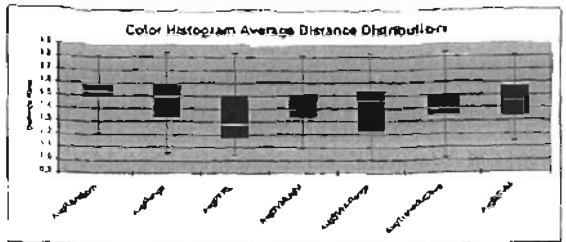
GABOR

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



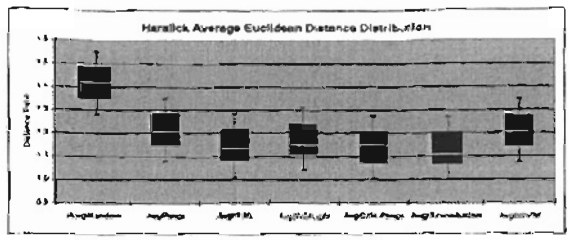
COLOR HISTOGRAM

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



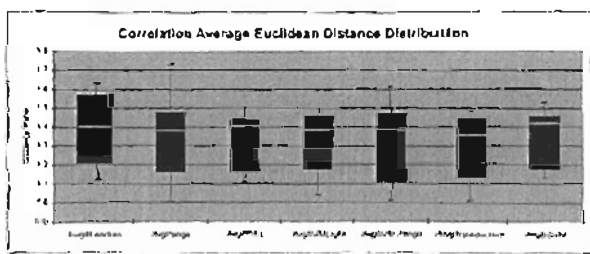
HARALICK

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



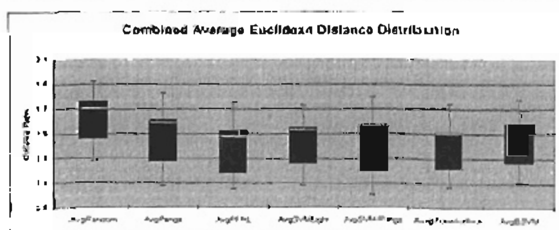
CORRELATION

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

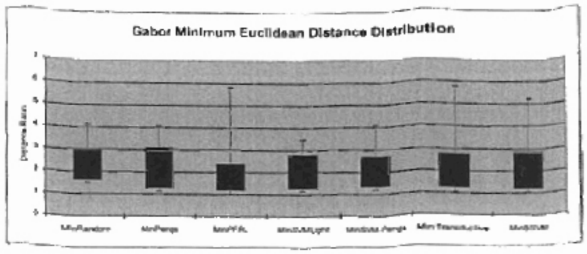
	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMPenga	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



MINIMUM VALUE

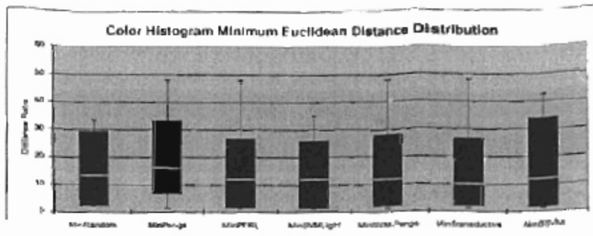
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	2.9254	4.1330	1.5112	1.6560	2.1007	110.0746	180.8370	318.3019
MinPengs	3.0606	4.0601	1.1243	1.2844	1.8837	56.3742	308.0079	3028.0502
MinPFRL	3.3666	5.6165	1.0000	1.1778	1.6130	61.3066	136.6611	481.6002
MinSVMLight	2.7817	3.4666	1.1401	1.2466	1.4373	45.7567	176.1685	2146.5547
MinSVM-Pengs	2.6772	4.0601	1.1674	1.3244	1.5937	58.3732	181.3239	3039.3102
MinTransductive	2.7236	5.7653	1.0316	1.2535	1.4894	46.6364	172.1563	415.9276
MinBSVM	2.8561	5.2168	1.0273	1.1772	1.4714	47.1356	186.0064	427.5605



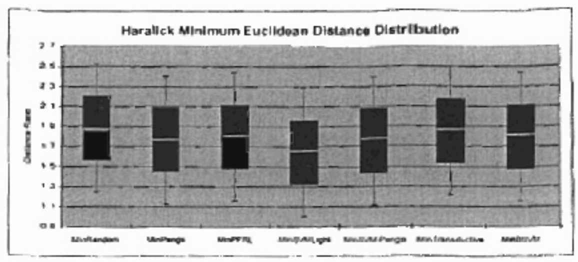
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	29.4300	33.4765	1.9072	2.3764	12.2247	1122.4747	2843.0034	3241.6475
MinPengs	33.3576	48.0044	1.2057	6.7664	16.2253	1522.6279	3258.7024	4700.[illegible]
MinPFRL	26.8240	47.8084	1.0000	1.6561	[illegible]	1017.6703	2582.4030	4692.6369
MinSVMLight	26.1061	35.0738	1.2057	1.6015	10.8094	850.9942	2510.4067	3407.383[illegible]
MinSVM-Pengs	28.1119	48.0044	[illegible]	1.6624	10.8734	987.3406	2743.1008	4703.6366
MinTransductive	26.8156	47.6200	1.1776	2.0018	10.0350	983.8995	2561.1064	4861.0669
MinBSVM	34.0317	42.7726	1.2091	1.6378	10.6207	983.8015	3303.1685	4177.2594



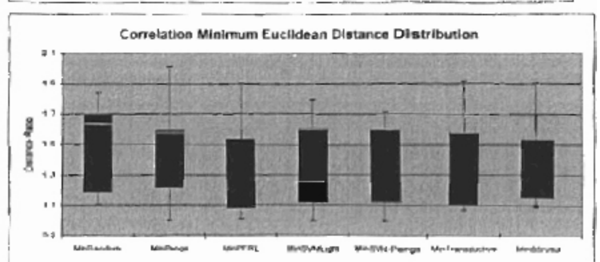
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	2.2065	2.5266	1.2465	1.5665	1.8805	68.6546	120.6573	152.6509
MinPengs	2.0854	2.4054	1.1253	1.4453	1.7684	71.5374	108.5400	140.5420
MinPFRL	2.1161	2.4361	1.1560	1.4360	1.7660	76.0046	111.6072	142.9099
MinSVMLight	1.9601	2.2801	1.0000	1.3000	1.6401	64.0053	96.0079	128.0106
MinSVM-Pengs	2.0750	2.3950	1.1149	1.4349	1.7549	75.4804	107.4961	139.4967
MinTransductive	2.1764	2.4964	1.2163	1.5363	1.8564	60.6356	147.5342	149.6406
MinBSVM	2.1177	2.4377	1.1576	1.4776	1.7977	78.7856	111.7565	143.7212



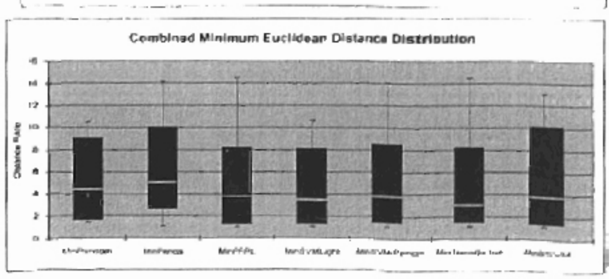
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	1.6822	1.9414	1.1016	1.1837	1.5035	90.3482	40.2228	84.1431
MinPengs	1.5848	2.2126	1.6000	1.2173	1.4368	46.6578	50.3885	101.2647
MinPFRL	1.5330	1.9013	1.0131	1.0629	1.4576	46.7872	53.3018	90.1256
MinSVMLight	1.5063	1.7952	1.0000	1.1227	1.4647	46.6862	60.6156	75.5106
MinSVM-Pengs	1.5640	1.7160	1.0000	1.1246	1.4568	45.6576	69.3960	74.9200
MinTransductive	1.5808	1.6145	1.0666	1.1053	1.3126	31.2575	68.0601	81.4473
MinBSVM	1.5250	1.6034	1.0926	1.1494	1.4103	41.0270	52.6196	90.3386



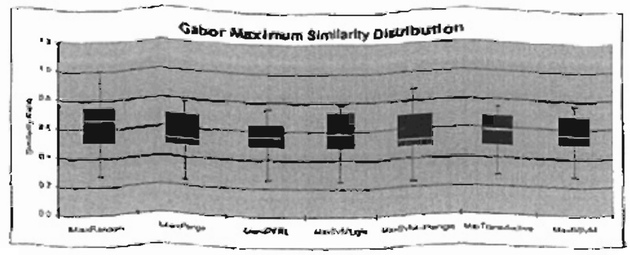
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	9.0646	10.4864	1.4417	1.6560	4.4289	324.6222	769.6664	906.6675
MinPengs	10.0318	14.1284	[illegible]	2.6782	5.2502	404.6615	857.4651	1255.9030
MinPFRL	8.2176	16.5208	1.0623	1.2961	4.0134	385.0606	688.4576	1293.1776
MinSVMLight	8.1130	10.6530	1.0585	1.3332	3.6309	255.3252	676.3851	927.1711
MinSVM-Pengs	8.6135	14.0521	1.0503	1.4015	3.8104	276.0421	726.4116	1246.2093
MinTransductive	8.2748	14.5250	1.1201	1.4692	3.6583	281.9514	693.5435	1293.5676
MinBSVM	10.1341	13.0831	1.1056	1.3806	3.6184	872.2178	872.3214	1165.2406



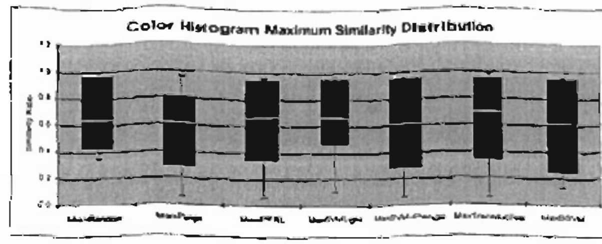
DOT PRODUCT
MAXIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
[illegible]	0.7640	1.0000	0.2693	0.5061	[illegible]	49.4072	86.6773	371.5707
[illegible]	0.6944	0.7167	0.2352	0.4826	0.5309	57.2985	107.3261	325.0634
[illegible]	[illegible]	0.7500	0.2665	0.4045	[illegible]	69.9646	102.2248	289.8134
[illegible]	[illegible]	0.7682	0.2465	0.4653	0.5081	47.0962	106.6643	350.7509
[illegible]	0.7000	0.8708	0.2352	0.4826	0.5309	37.2985	107.7263	325.0634
[illegible]	0.6683	0.7400	0.2706	[illegible]	0.5827	65.7065	107.4800	361.7986
[illegible]	[illegible]	0.7630	[illegible]	0.5005	[illegible]	71.0005	[illegible]	[illegible]



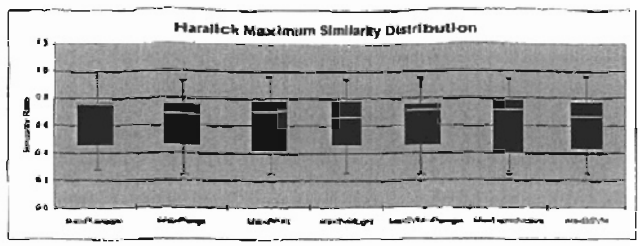
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
[illegible]	[illegible]	1.0000	0.3491	0.4257	[illegible]	55.7351	[illegible]	[illegible]
[illegible]	[illegible]	0.9580	0.0590	0.7003	0.5096	66.7744	244.5110	[illegible]
[illegible]	[illegible]	0.9575	[illegible]	0.3197	0.4633	50.7735	[illegible]	[illegible]
[illegible]	[illegible]	0.9655	0.1030	0.4715	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.9512	0.0568	0.2624	0.6066	66.7741	254.0470	[illegible]
[illegible]	[illegible]	[illegible]	0.0576	0.3459	0.6718	46.0618	183.4044	1625.6009
[illegible]	[illegible]	0.9648	0.1295	0.2485	0.6006	66.7741	302.4616	683.4479



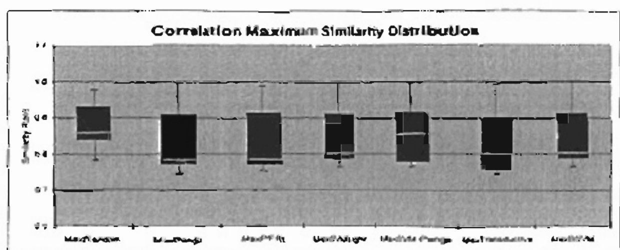
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
[illegible]	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0.7810	0.9280	0.2400	0.4620	0.5388	69.8093	[illegible]	[illegible]
[illegible]	0.7781	0.8633	0.2600	0.4294	0.5630	[illegible]	[illegible]	[illegible]
[illegible]	0.7782	[illegible]	0.2531	0.4814	0.5070	97.2549	[illegible]	[illegible]
[illegible]	0.7845	0.9472	0.2600	0.4575	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0.7783	0.9444	0.2600	0.4620	0.5400	[illegible]	[illegible]	[illegible]
[illegible]	0.7661	0.9616	0.2530	0.4324	0.5346	[illegible]	[illegible]	[illegible]



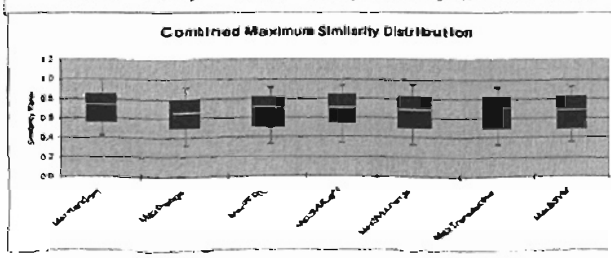
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
[illegible]	[illegible]	0.9766	0.7632	[illegible]	0.8133	[illegible]	[illegible]	[illegible]
[illegible]	0.8006	0.8677	[illegible]	[illegible]	0.7835	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.9677	0.7644	0.7727	0.7830	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1.0000	0.7643	0.7574	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.7643	0.7765	0.8625	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.7595	0.7963	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



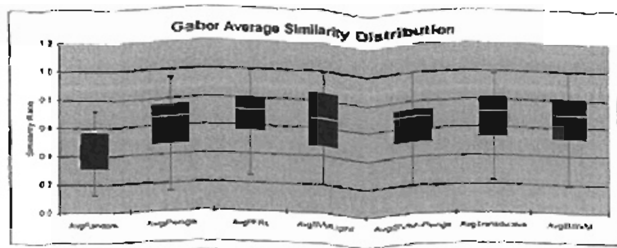
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
[illegible]	[illegible]	[illegible]	0.4168	0.5575	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.3309	0.5027	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.3399	0.5087	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.3250	0.5003	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.4063	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.4777	[illegible]	[illegible]	[illegible]



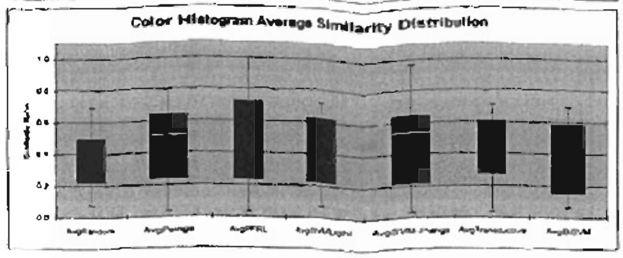
AVERAGE VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.5690	0.7325	0.1228	0.5120	0.3941	153.7325	220.5329	734.0722
AvgPerngs	0.7588	[illegible]	0.1435	0.4722	0.5041	86.3760	111.7911	306.9616
AvgPFRL	0.7904	[illegible]	0.2908	0.5638	0.3919	[illegible]	77.5231	258.7234
AvgSVMLight	0.8465	0.8662	0.1909	0.4691	0.5129	95.0920	113.1808	402.8800
AvgSVM-Perngs	0.7333	1.0001	0.1318	0.5065	0.5365	99.3765	97.4217	431.4136
AvgTransductive	0.8133	0.5640	0.2283	0.5255	0.5051	68.0464	86.7281	336.0115
AvgBSVM	0.8071	[illegible]	0.1872	0.5162	0.5365	85.8957	92.5643	432.1906



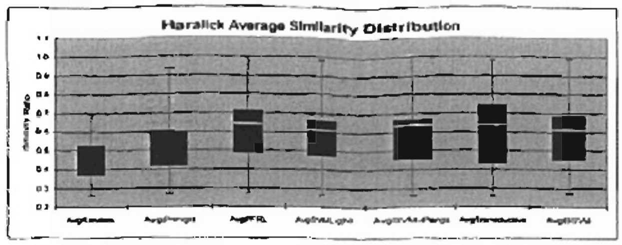
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.4947	0.6028	0.0753	0.2169	0.4053	145.8093	354.5229	1227.5861
AvgPerngs	0.6305	0.7925	0.0344	0.2093	0.3941	464.4246	317.9494	2006.5070
AvgPFRL	0.7347	1.0000	0.0330	0.2544	0.4373	86.4077	335.5280	2927.6115
AvgSVMLight	0.6255	0.7165	0.0097	0.2219	0.5330	87.8637	380.7364	1319.1831
AvgSVM-Perngs	0.8420	0.9655	0.0349	0.2156	0.3075	151.5935	393.7348	3056.2308
AvgTransductive	0.8084	0.7064	0.0335	0.3734	0.5315	98.2144	275.7520	2850.4754
AvgBSVM	0.5851	0.6834	0.0544	0.1517	0.4080	[illegible]	[illegible]	1851.5240



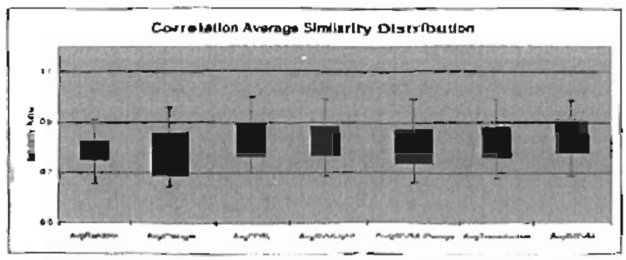
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.5294	0.6645	0.3604	[illegible]	0.4754	136.6306	172.2804	284.0606
AvgPerngs	0.6030	0.9546	0.3642	0.4167	0.5423	84.4094	139.9493	275.6025
AvgPFRL	0.7148	0.6660	0.2713	[illegible]	0.5620	[illegible]	145.2684	[illegible]
AvgSVMLight	0.5629	0.9823	0.2625	0.4714	0.5627	107.1579	[illegible]	[illegible]
AvgSVM-Perngs	[illegible]	1.0000	0.2600	0.4526	0.4313	100.8711	[illegible]	244.1374
AvgTransductive	[illegible]	0.9625	0.7179	0.4300	0.5024	98.0437	152.3787	[illegible]
AvgBSVM	[illegible]	0.9654	0.2984	0.4467	0.4731	[illegible]	152.6540	273.4420



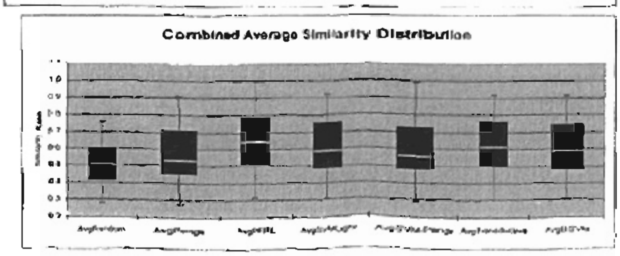
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.8752	0.9148	0.6520	[illegible]	0.7979	31.4300	34.8779	51.7728
AvgPerngs	0.8580	0.9670	0.6408	[illegible]	0.7970	27.0072	43.7304	51.3664
AvgPFRL	0.8968	1.0000	0.7404	[illegible]	0.8305	30.4119	31.9115	43.7801
AvgSVMLight	0.8858	0.9911	0.6649	[illegible]	0.8202	31.2039	30.0854	46.0663
AvgSVM-Perngs	0.8700	0.9954	0.6618	[illegible]	0.8083	33.7250	38.4446	51.1640
AvgTransductive	0.8813	0.9911	0.6774	[illegible]	0.7921	28.3096	31.4528	41.6025
AvgBSVM	0.8095	0.9464	0.6441	[illegible]	0.8795	31.4017	28.2274	41.3258



ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

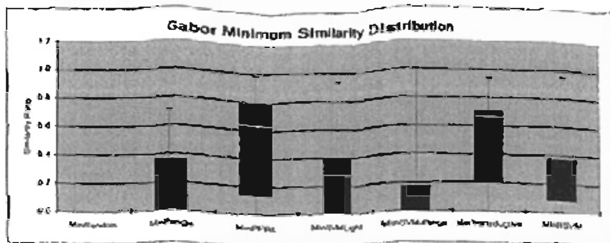
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.6033	0.7849	0.3194	0.4173	[illegible]	166.6663	142.2706	258.0585
AvgPerngs	0.7169	0.8072	0.2719	0.4536	0.5050	82.8050	149.6650	398.4005
AvgPFRL	0.7831	0.9563	0.3156	0.5107	0.6025	[illegible]	[illegible]	[illegible]
AvgSVMLight	0.7547	0.8209	0.3343	0.4839	[illegible]	84.9737	104.7703	334.6477
AvgSVM-Perngs	0.7377	[illegible]	0.2904	0.4705	[illegible]	77.0890	107.3220	315.1700
AvgTransductive	0.7621	0.9166	0.2963	0.5000	0.6052	81.4704	80.3398	200.5336
AvgBSVM	0.7468	0.9145	0.3027	0.4743	0.5604	87.8304	92.8654	302.8067



MINIMUM VALUE

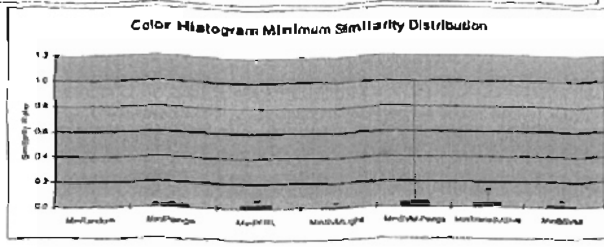
GABOR

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000	NAN	[illegible]	[illegible]
[illegible]	[illegible]	0.7000	0.0000	0.0000	0.1000	521.3595	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0002	0.1537	0.4621	115.3906	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	0.0000	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	0.1925	[illegible]	102.9843	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



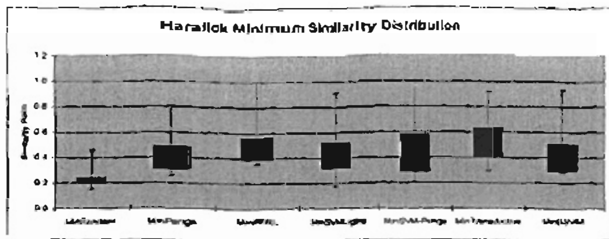
COLOR HISTOGRAM

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
[illegible]	[illegible]	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
[illegible]	[illegible]	[illegible]	0.0000	[illegible]	0.0017	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.0657	0.0000	0.0000	0.0022	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	0.0001	[illegible]	[illegible]	##########	[illegible]
[illegible]	[illegible]	[illegible]	0.0000	[illegible]	0.0017	[illegible]	[illegible]	NAN
[illegible]	[illegible]	[illegible]	[illegible]	0.0020	0.0158	[illegible]	[illegible]	NAN
[illegible]	[illegible]	[illegible]	[illegible]	0.0008	[illegible]	[illegible]	[illegible]	NAN



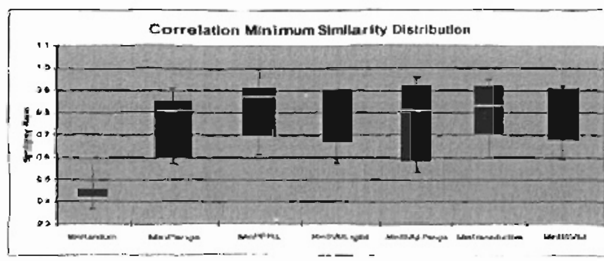
HARALICK

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.4053	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



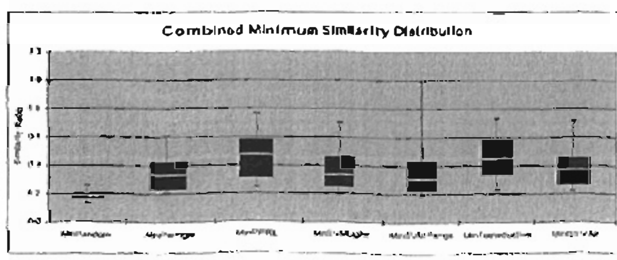
CORRELATION

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.6704	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.7070	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



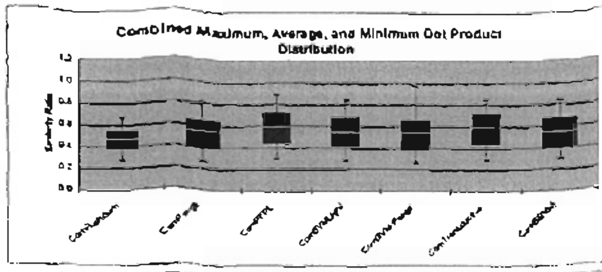
ALL GABOR, COLOR HISTOGRAM, HARALICK & CORRELATION COMBINED

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	0.6136	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



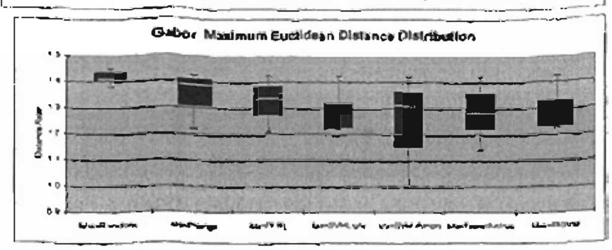
ALL REAL OBJ DOT PRODUCT MAX, MIN, AVG COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
ComRandom	0.5833	0.6686	0.1760	0.3741	0.4490	117.3787	160.3753	252.8568
ComRange	0.6448	0.8127	0.2062	0.3951	0.4879	105.5578	146.4579	265.[illegible]
ComPFRL	0.7264	0.8800	0.2946	0.4912	0.6799	90.7851	120.7169	230.5144
ComSVMLight	0.6651	0.8484	0.1770	0.4272	0.5206	87.0956	127.5061	290.3634
ComSVMRange	0.6506	0.8734	0.2656	0.3866	0.4966	95.3075	144.1617	267.4881
ComTransductive	0.7207	0.8563	0.2849	0.4410	0.6642	72.6007	120.8022	241.7352
ComBSVM	0.6757	0.8451	0.2016	0.4000	0.5502	82.5537	117.5266	233.9462



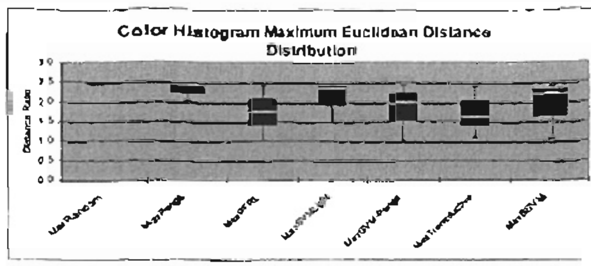
OPENGL OBJECT
EUCLIDEAN DISTANCE
MAXIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.4206	1.4499	1.3774	1.2091	1.4208	42.0764	43.[illegible]	42.[illegible]
MaxRange	1.4570	1.4206	1.2201	1.3068	1.3032	30.3404	40.4078	42.0764
MaxPFRL	1.3532	1.4706	1.2046	1.2759	1.3469	34.4032	38.3[illegible]	42.0764
MaxSVMLight	1.2521	1.4206	1.2467	1.2163	1.2106	21.4000	32.6336	42.0764
MaxSVMRange	1.2531	1.4306	1.0005	1.1527	1.3058	30.8486	30.3411	42.0764
MaxTransductive	1.3251	1.4256	1.1428	1.2301	1.2974	20.7778	35.3090	42.0764
MaxBSVM	1.3251	1.4256	1.2285	1.2557	1.2424	34.3448	30.4305	42.0764



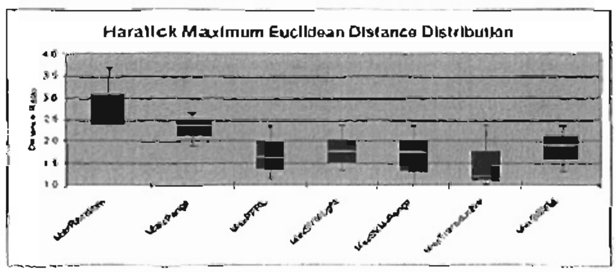
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	2.4347	2.4347	2.4347	2.4347	2.4347	[illegible]	143.4580	143.4580
MaxRange	2.4312	2.4347	1.8482	2.3580	2.4278	[illegible]	143.1753	143.4580
MaxPFRL	2.1009	2.4347	1.0000	1.3436	1.9613	76.3[illegible]	110.0344	143.4580
MaxSVMLight	2.4175	2.4347	1.4945	1.8465	2.4036	110.0301	141.7343	143.4580
MaxSVMRange	2.2814	2.4347	1.8184	1.6334	2.0457	104.4[illegible]	134.1440	143.4580
MaxTransductive	1.8812	2.4347	1.1384	1.4130	1.6506	60.2443	126.1168	143.4580
MaxBSVM	2.3007	2.4347	[illegible]	1.5718	2.2626	120.1794	135.0036	143.4580



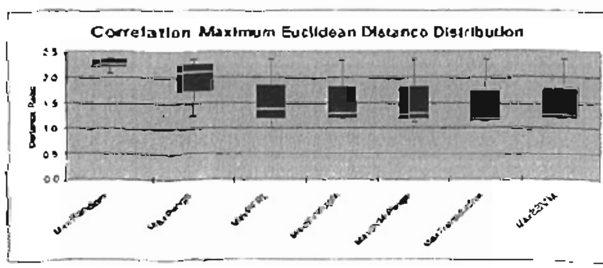
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	3.5800	3.7007	2.[illegible]	[illegible]	3.4563	145.6270	207.6904	270.3836
MaxRange	3.3270	2.6473	1.8005	2.1242	2.3675	136.7400	153.7635	168.7343
MaxPFRL	2.7010	2.3679	1.1357	1.3652	1.6540	83.4070	100.7754	130.7898
MaxSVMLight	3.0223	2.3679	1.3411	1.5140	1.6795	67.6848	103.2222	138.7898
MaxSVMRange	2.0227	2.3679	1.0000	1.3383	1.6706	87.0746	103.3329	138.7898
MaxTransductive	1.7447	2.3973	1.0000	1.0000	1.1453	56.3556	76.9111	138.7898
MaxBSVM	2.1320	2.3679	1.3270	1.5085	1.9951	84.6454	113.7044	138.7898



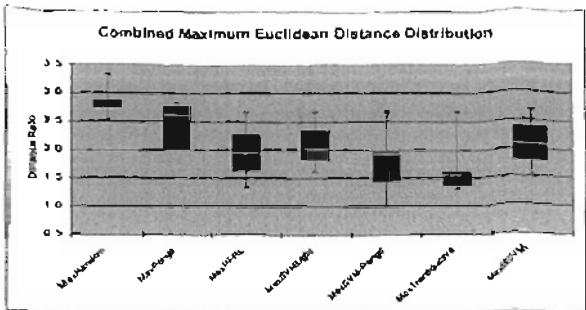
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	2.3526	2.3900	2.0911	2.2640	2.3433	154.3234	181.1007	156.6748
MaxRange	2.2522	2.3433	1.2764	1.7012	2.0838	118.5154	146.3254	154.3254
MaxPFRL	1.[illegible]	2.3433	1.0000	1.4744	1.3469	34.6666	84.4000	154.3254
MaxSVMLight	1.6919	2.3433	1.1706	1.2290	1.2703	31.5799	81.1291	154.3254
MaxSVMRange	1.8113	2.3433	1.0956	1.1609	1.2702	31.3274	87.1291	154.3254
MaxTransductive	1.7683	2.3433	1.1338	1.1640	1.1448	17.6096	35.9030	154.3254
MaxBSVM	1.5233	2.3433	1.2016	1.2415	1.2854	25.3618	60.3336	154.3254



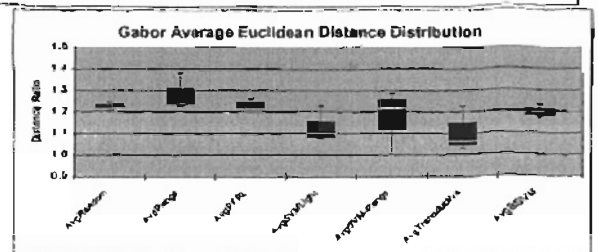
MAX GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	[illegible]Prob	[illegible]Prob	WorstCase
MaxRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



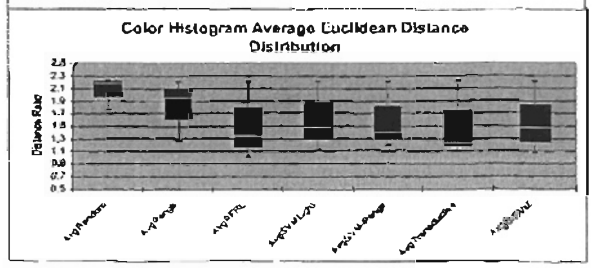
AVERAGE VALUE
GABOR

	High	Max	Min	Low	Med	[illegible]Prob	[illegible]Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



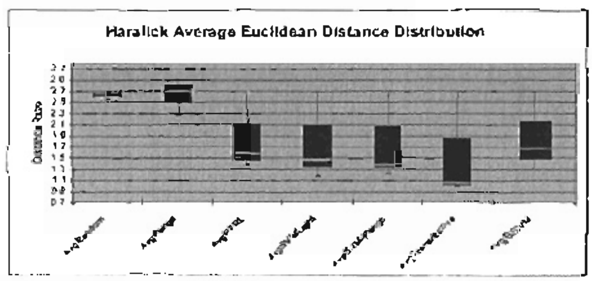
COLOR HISTOGRAM

	High	Max	Min	Low	Med	[illegible]Prob	[illegible]Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



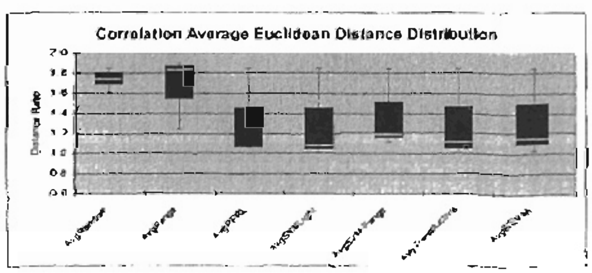
HARALICK

	High	Max	Min	Low	Med	[illegible]Prob	[illegible]Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



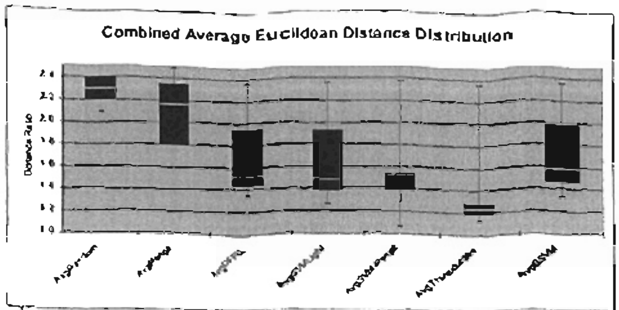
CORRELATION

	High	Max	Min	Low	Med	[illegible]Prob	[illegible]Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



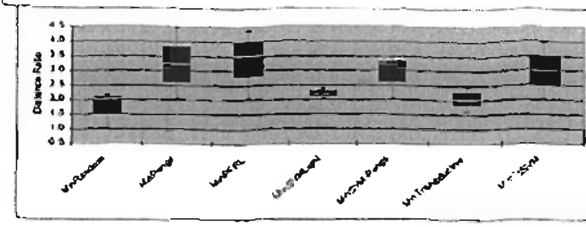
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1-2Prob	3-4Prob	WorstCase
AvgRandom	2.3006	2.4402	2.0020	2.1987	2.2541	115.4930	129.3880	136.0347
AvgRange	2.3490	2.4870	1.8085	1.8086	2.1849	105.2262	120.6483	133.6101
AvgPFRL	1.3372	2.3651	1.3482	1.4288	1.5095	41.7811	[illegible]	122.1604
AvgSVMLight	1.8250	2.3475	1.2672	1.3786	1.4825	40.1801	80.4175	121.4445
AvgSVM-Range	1.5370	2.3710	1.0446	1.3781	1.5145	42.2890	44.3133	122.7980
AvgTransductive	1.2100	2.3675	1.1252	1.1802	1.2256	15.4094	10.2940	121.4449
AvgBSVM	1.9866	2.3516	1.3583	1.4542	1.5820	48.6037	55.0343	121.4444



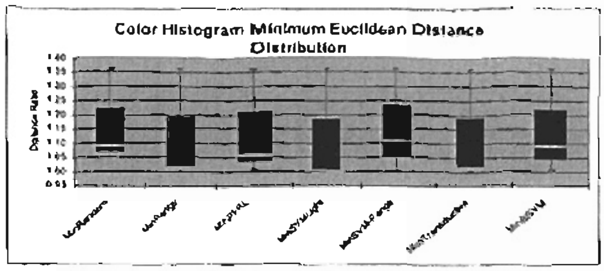
MINIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1-2Prob	3-4Prob	WorstCase
MinRandom	2.1104	2.1731	1.0003	1.5299	2.0473	166.7731	111.0421	117.3105
MinRange	3.0136	4.4401	1.0417	2.6131	3.1764	217.5416	251.8571	[illegible]
MinPFRL	3.5404	4.3655	2.0417	2.8030	3.3602	256.4980	256.5424	236.5004
MinSVMLight	2.2849	2.3555	2.0417	2.1310	2.2142	121.4320	126.4900	135.5500
MinSVM-Range	3.1141	3.4810	2.0417	2.6131	3.1764	217.5416	253.8230	246.1081
MinTransductive	2.2802	2.4756	1.4134	1.8305	2.2477	104.7730	126.3291	117.8463
MinBSVM	3.1426	3.5463	2.0417	2.9144	2.9921	186.2566	249.5648	236.5306



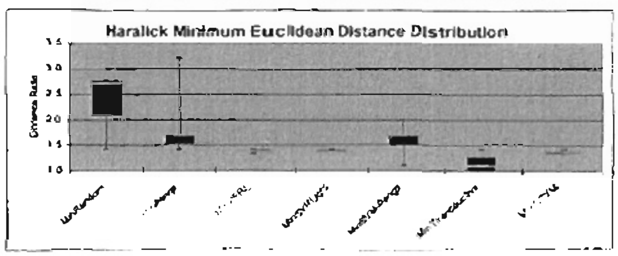
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1-2Prob	3-4Prob	WorstCase
MinRandom	1.2241	1.3611	1.0467	1.0082	1.0472	8.7967	22.4426	26.1704
MinRange	1.1672	1.3611	1.0000	1.0410	1.6226	2.3653	18.1467	36.1704
MinPFRL	1.2145	1.3611	1.0078	1.0044	1.0612	5.1260	21.1157	31.1704
MinSVMLight	1.1953	1.3611	1.0000	1.0265	1.0223	0.5626	18.6316	36.1704
MinSVM-Range	1.2004	1.3611	1.0000	1.0375	1.1453	10.4056	21.4376	36.1704
MinTransductive	1.1846	1.3611	1.0619	1.0113	1.6215	2.4464	16.9566	30.1734
MinBSVM	1.2208	1.3611	1.0097	1.0433	1.2795	2.8511	22.0611	36.1704



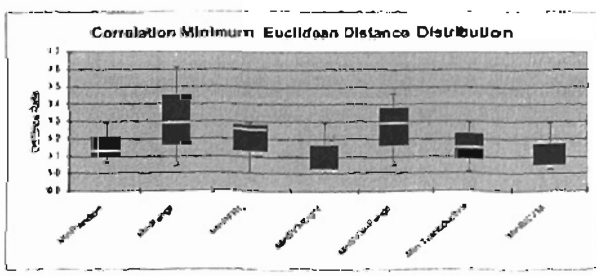
HARALICK

	High	Max	Min	Low	Med	1-2Prob	3-4Prob	WorstCase
MinRandom	2.7546	2.7794	1.4220	2.8603	2.7372	173.7654	171.6623	177.5491
MinRange	1.2591	3.1463	1.4220	1.5268	1.6099	88.9678	48.9620	188.8291
MinPFRL	[illegible]	1.4229	1.3493	1.3713	1.3830	30.3254	40.8107	42.2920
MinSVMLight	1.4008	1.4229	1.3674	1.3733	1.3768	37.5734	40.0897	42.2920
MinSVM-Range	[illegible]	1.6071	1.1126	1.4829	1.6069	60.4820	60.8820	50.7063
MinTransductive	1.1726	1.4229	1.0000	1.0000	1.1437	14.3741	27.2542	42.2920
MinBSVM	1.3824	1.4229	1.2544	1.3565	1.3998	33.8882	38.0756	42.2920



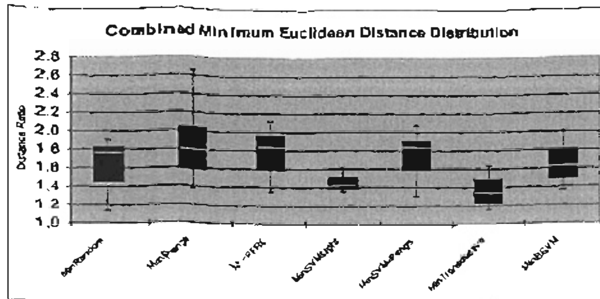
CORRELATION

	High	Max	Min	Low	Med	1-2Prob	3-4Prob	WorstCase
MinRandom	1.2149	1.2533	1.0575	1.0873	1.1511	13.1448	21.1967	29.2749
MinRange	1.4525	1.4172	1.0300	1.1953	1.2921	25.3740	43.3407	81.2184
MinPFRL	1.2500	1.2621	1.0007	1.1263	1.2029	28.7607	34.0320	29.2749
MinSVMLight	1.1660	1.2011	1.0000	1.0897	1.0295	3.0145	16.6217	29.2749
MinSVM-Range	1.3773	1.4619	1.0294	1.1863	1.2627	20.2740	37.7320	46.1903
MinTransductive	1.2297	1.2571	1.0909	1.0997	1.1606	16.6606	12.3679	29.2749
MinBSVM	1.1707	1.1947	1.0216	1.0353	1.0846	4.6021	17.0660	29.2749



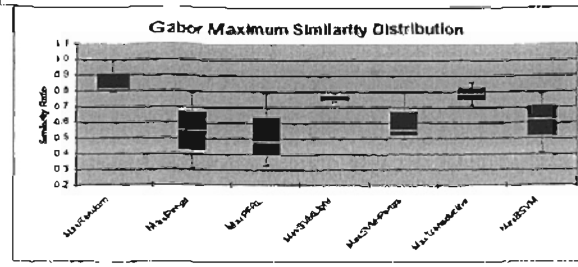
ALL GABOR, COLOR HISTOGRAM, HARALICK & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	1.8255	1.9006	1.1336	1.4424	1.7500	54.4163	61.0036	157.6312
MinRange	2.0406	2.6562	1.3776	1.5701	1.7979	88.5608	79.0182	134.4511
MinPFRL	1.9554	2.1117	1.3513	1.5658	1.8200	40.3360	77.3463	68.1547
MinSVMLight	1.5003	1.6312	1.3530	1.3822	1.4104	34.3467	33.1064	41.6001
MinSVM-Range	1.9075	2.0704	1.3000	1.5806	1.6135	60.3763	88.2093	[illegible]
MinTransductive	1.4693	1.6051	1.1534	1.2537	1.3446	18.6064	51.3412	44.5446
MinBSVM	1.6134	2.0064	1.3578	1.4476	1.4114	47.6428	50.7662	76.4473



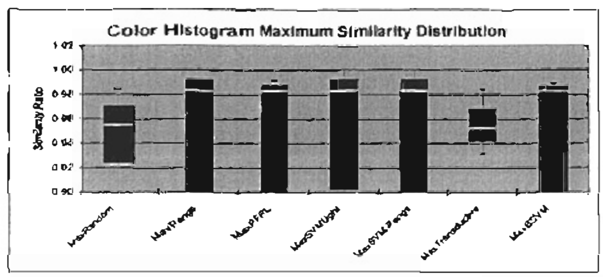
DOT PRODUCT
MAXIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.9061	1.0000	0.7610	0.8040	0.8180	27.7060	34.7641	76.4865
MaxRange	0.6625	0.7910	0.3107	0.4284	0.5460	52.8671	133.3072	224.6511
MaxPFRL	0.6357	0.7910	0.3473	0.4039	0.4804	106.9475	147.8019	205.5075
MaxSVMLight	0.7734	0.7910	0.7170	0.7464	0.7538	37.3109	33.9765	35.6687
MaxSVM-Range	0.6685	0.7910	0.4047	0.5264	0.5460	63.8417	82.0410	109.1408
MaxTransductive	0.8251	0.8601	0.7156	0.7533	0.7050	29.4063	38.7560	35.7963
MaxBSVM	0.7029	0.7210	0.4570	0.5173	0.6170	70.4400	83.2505	145.9717



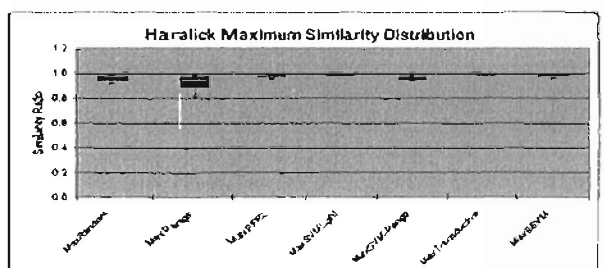
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.9707	0.9846	0.9510	0.9240	0.9569	4.4606	8.3204	19.2785
MaxRange	0.9925	1.0000	0.7610	0.6523	0.9646	1.3481	13.2706	76.0099
MaxPFRL	0.9878	0.9912	0.7617	0.6611	0.9646	1.5431	19.3366	77.9581
MaxSVMLight	0.9903	1.0000	0.8706	0.9025	0.9646	1.5684	16.7060	31.6720
MaxSVM-Range	0.9923	1.0000	0.7592	0.5014	0.9646	1.5681	14.0259	35.2836
MaxTransductive	0.9084	0.9846	0.9516	0.9416	0.9523	3.0123	6.1657	7.3666
MaxBSVM	0.9858	0.9891	0.7674	0.5400	0.9646	1.5621	12.6810	29.8753



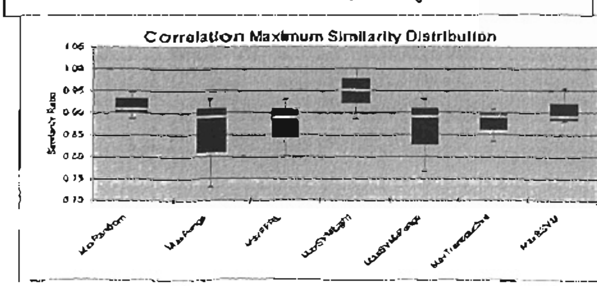
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.9611	0.9916	0.9271	0.9405	0.9700	3.0756	5.6518	8.4950
MaxRange	0.9763	0.9915	0.8132	0.8570	0.9046	4.0142	17.7373	22.9704
MaxPFRL	0.9850	0.9913	0.9618	0.9744	0.9871	1.3046	2.8796	3.6864
MaxSVMLight	0.9951	0.9967	0.9681	0.9944	0.9915	0.8663	1.0057	1.2067
MaxSVM-Range	0.9760	0.9916	0.9403	0.9537	0.9560	1.2767	4.8500	8.0337
MaxTransductive	0.9977	1.0000	0.9915	0.9934	0.9953	0.4615	0.6910	6.8193
MaxBSVM	0.9916	0.9419	0.9064	0.9600	0.9915	0.8563	2.0456	2.9443



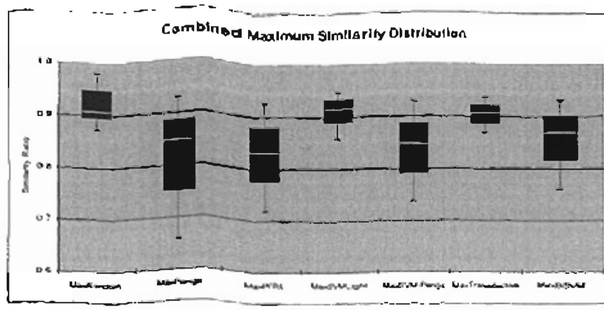
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.9327	0.9460	0.4862	0.9025	0.9168	8.8580	10.8636	42.1497
MaxRange	0.9062	0.9329	0.7806	0.8051	0.8807	12.6427	20.6657	36.1509
MaxPFRL	0.9066	0.9316	0.8006	0.8434	0.8863	12.6477	10.5711	24.6173
MaxSVMLight	0.9777	1.0000	0.4862	0.9004	0.9563	4.7626	8.6454	12.6477
MaxSVM-Range	0.9062	0.9329	0.7645	0.8504	0.8957	12.8477	31.0127	36.1565
MaxTransductive	0.8968	0.9075	0.8706	0.8568	0.8867	12.6477	15.2561	18.9576
MaxBSVM	0.9100	0.9546	0.8450	0.8626	0.8957	12.8470	15.2665	33.1161



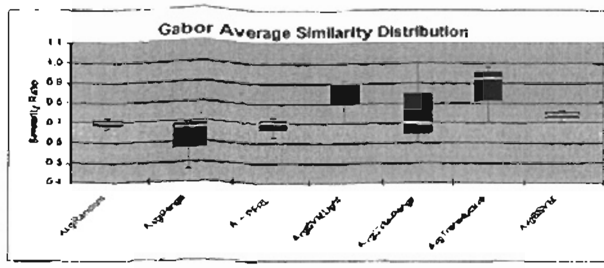
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	[illegible]	0.9807	0.8727	0.5944	0.9162	7.0427	[illegible]	[illegible]
MaxRange	0.8967	0.9227	0.4569	0.7548	0.8446	16.1080	[illegible]	[illegible]
MaxPFRL	0.8826	0.9203	0.7176	0.7782	0.8346	17.3058	[illegible]	[illegible]
MaxSVMLight	0.9243	0.9474	[illegible]	[illegible]	0.9216	8.4109	10.2148	[illegible]
MaxSVM-Range	[illegible]	0.9287	0.7267	0.7907	0.8846	16.1080	24.0000	[illegible]
MaxTransduction	0.9221	0.9362	0.8660	0.8611	0.9092	9.2182	[illegible]	12.9748
MaxBSVM	0.9019	0.9315	0.7567	0.8155	0.8723	12.8738	20.1000	[illegible]



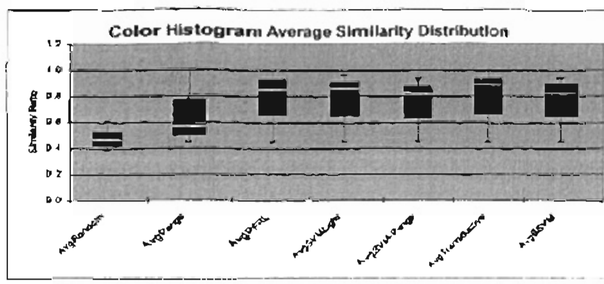
AVERAGE VALUES
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.7094	0.7225	0.6680	0.6873	0.6964	43.3096	46.4399	[illegible]
AvgRange	0.6667	[illegible]	0.4825	0.5000	0.6271	47.6648	75.5043	116.2028
AvgPFRL	0.7104	0.7244	0.6285	0.6824	0.6964	43.3066	96.0620	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	0.7964	[illegible]	11.0823	25.2917	[illegible]
AvgSVM-Range	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	63.0760	65.1455
AvgTransduction	[illegible]	[illegible]	[illegible]	0.8141	[illegible]	[illegible]	22.8369	[illegible]
AvgBSVM	[illegible]	[illegible]	0.6664	0.7223	[illegible]	[illegible]	38.4581	[illegible]



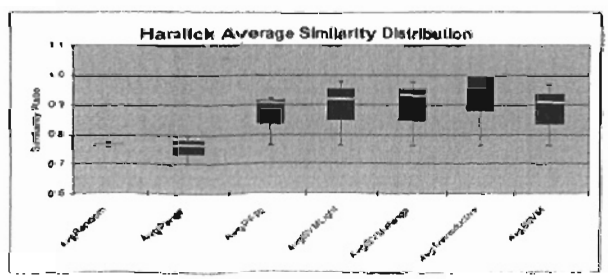
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	0.3622	0.4153	0.4484	120.0760	140.7901	[illegible]
AvgRange	0.7756	[illegible]	0.4164	0.4674	0.5405	93.0618	100.4758	[illegible]
AvgPFRL	0.8332	0.8688	0.4464	0.6417	0.8675	45.2764	81.0692	[illegible]
AvgSVMLight	0.8115	0.8030	0.4464	0.8028	0.8172	45.4801	80.1890	[illegible]
AvgSVM-Range	[illegible]	[illegible]	0.4174	0.6352	0.8169	72.2541	87.8352	[illegible]
AvgTransduction	[illegible]	1.0000	0.4184	0.6643	0.8607	15.5476	50.4817	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	0.5450	0.8437	46.3255	54.7880	[illegible]



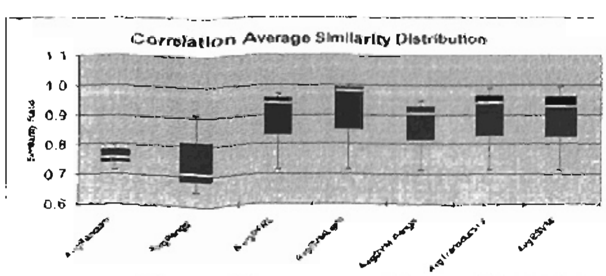
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	0.7618	0.7180	0.6370	[illegible]	0.7042	[illegible]	[illegible]	[illegible]
AvgPFRL	0.9163	0.9210	0.7642	0.8505	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	0.9530	0.9776	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	0.9183	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransduction	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	0.8342	[illegible]	[illegible]	[illegible]	[illegible]



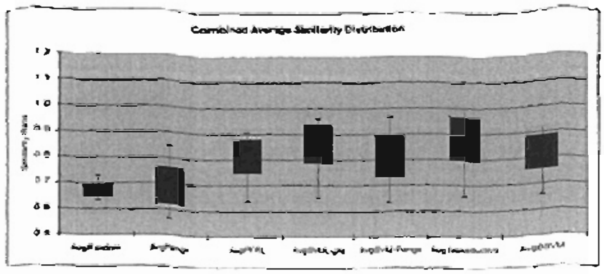
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransduction	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

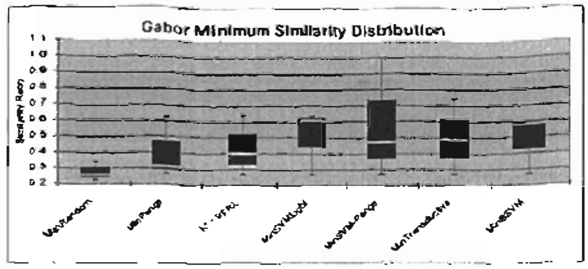
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



MINIMUM VALUE

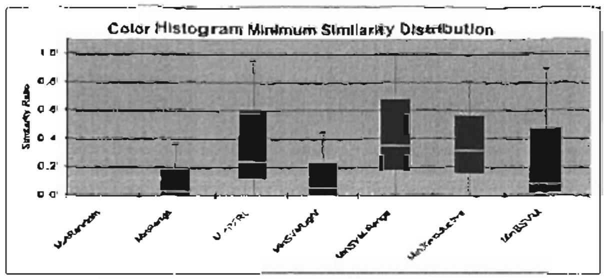
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



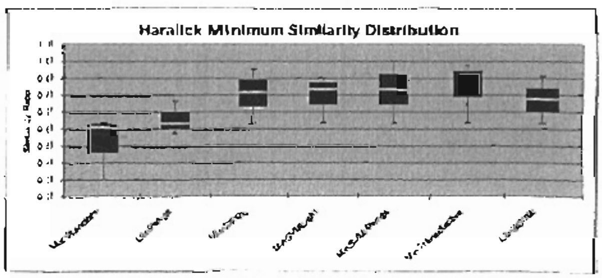
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



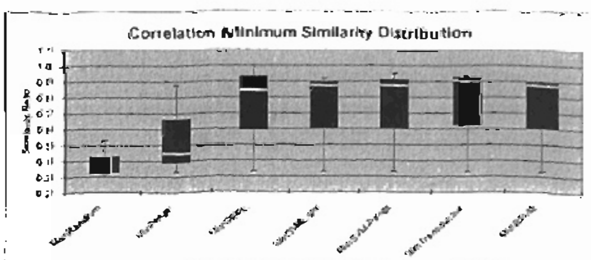
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



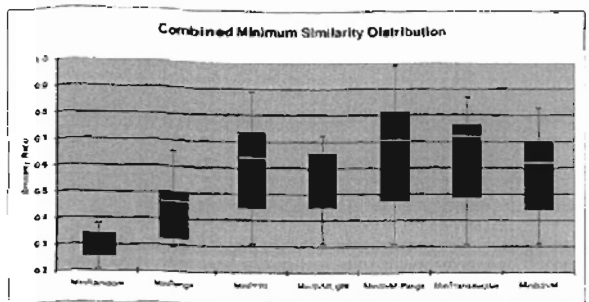
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



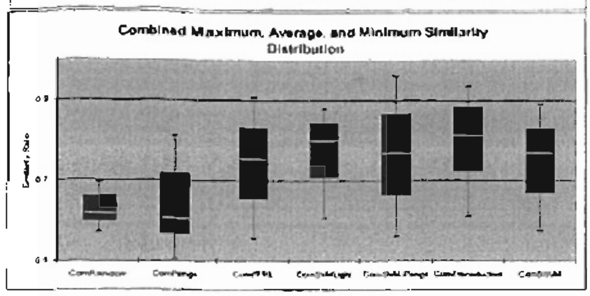
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	0.3414	0.3789	0.2086	0.2566	0.3044	223.8991	294.3003	372.0000
MinRange	0.5042	0.6664	0.2521	0.3231	0.2851	179.4407	205.3794	236.0063
MinPFRL	0.7347	0.8873	0.3085	0.4453	0.5627	69.3060	121.5774	249.8295
MinSVMLight	0.6578	0.7346	0.3085	0.4491	0.5804	67.1199	119.5799	249.8295
MinSVMRange	0.8128	0.8867	0.3085	0.4737	0.6380	94.4088	106.2824	249.8295
MinTransductive	0.7660	0.8676	0.3085	0.4464	0.6043	46.5372	192.8900	249.8295
MinBSVM	0.6363	0.8353	0.3089	0.4358	0.5701	73.0944	174.4128	349.8344



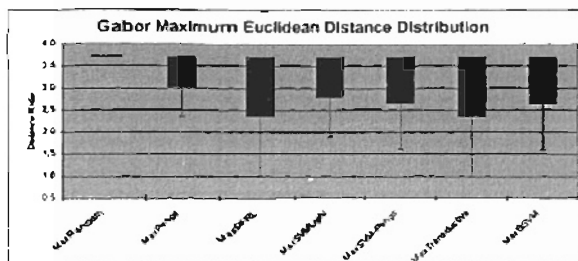
ALL OPENCV DOT PRODUCT MAX, MIN AND COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
CombRandom	0.6324	0.6950	0.5700	0.6000	0.6261	53.4606	[illegible]	64.2007
CombRange	0.7197	0.8116	0.5655	0.6401	0.6266	64.7404	[illegible]	69.8700
CombPFRL	0.8316	0.8098	0.5550	0.6560	0.7470	38.3696	48.3077	73.8179
CombSVMLight	0.8447	0.8754	0.5874	0.7087	0.8100	16.5536	36.4706	58.0067
CombSVMRange	0.8573	0.8692	0.5800	0.6668	0.7763	34.6250	[illegible]	71.7137
CombTransductive	0.8644	0.8327	0.6108	0.7235	0.8062	14.6857	32.7334	57.2570
CombBSVM	0.8200	0.8916	0.5750	0.6707	0.7663	23.5000	43.5689	47.0320



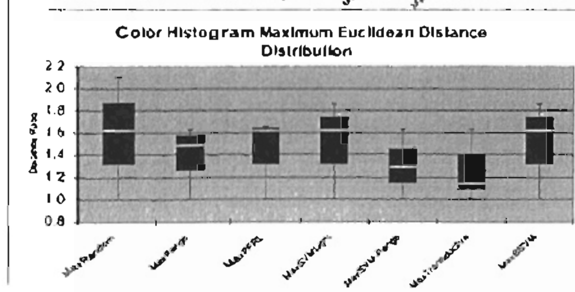
SCIENTIFIC DATA
EUCLIDEAN DISTANCE
MAXIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	3.7018	3.7018	1.7018	3.7018	3.7018	270.1815	270.1815	270.1815
MaxRange	3.7018	3.7018	[illegible]	3.0018	3.7018	270.1815	270.1815	270.1815
MaxPFRL	3.7018	3.7018	1.0000	2.3410	3.7018	270.1815	270.1815	270.1815
MaxSVMLight	3.7018	3.7018	1.8068	2.7802	3.7018	270.1815	270.1815	270.1815
MaxSVMRange	3.7018	3.7018	1.6100	2.6807	3.7018	270.1815	270.1815	270.1815
MaxTransductive	3.7018	3.7018	1.0000	2.3500	3.7018	270.1815	270.1815	270.1815
MaxBSVM	3.7018	3.7018	1.5633	2.6478	3.7018	270.1815	270.1815	270.1815



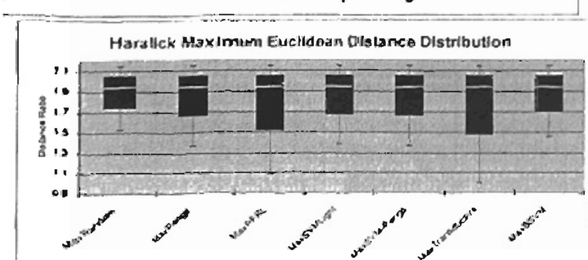
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.8630	2.0985	1.0000	1.3149	1.6297	52.9734	69.3668	109.8545
MaxRange	1.8758	1.5297	1.0000	1.2829	1.5216	52.1633	57.1163	[illegible]
MaxPFRL	1.6433	1.6570	1.0000	1.3146	1.6297	92.9734	64.3467	[illegible]
MaxSVMLight	1.7614	1.8538	1.0000	1.3149	1.6297	52.9734	74.5443	81.3949
MaxSVMRange	1.4627	1.6297	1.0000	1.1613	1.3627	30.7770	[illegible]	62.9734
MaxTransductive	1.3836	1.6297	1.0000	1.0620	1.1680	6.1544	[illegible]	62.9734
MaxBSVM	1.7414	1.8511	1.0000	1.3149	1.6297	62.9734	74.5443	63.2940



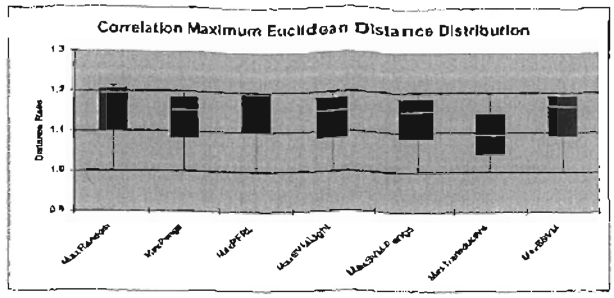
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	2.0674	2.1431	1.5280	1.7407	1.9547	95.1670	134.7403	134.3195
MaxRange	2.0674	2.1431	1.3695	1.6606	1.9547	95.1670	104.7403	144.3195
MaxPFRL	2.0674	2.1431	1.5028	1.8172	1.9547	95.1670	104.7403	144.3195
MaxSVMLight	2.0674	2.1431	1.3698	1.6700	1.9547	95.1670	104.7403	134.3195
MaxSVMRange	2.0674	2.1431	1.3695	1.6606	1.9547	95.1670	104.7403	134.3195
MaxTransductive	2.0674	2.1431	1.0000	1.6758	1.9547	95.1670	104.7403	134.3195
MaxBSVM	2.0674	2.1431	1.4567	1.7643	1.9547	95.1670	104.7403	133.3195



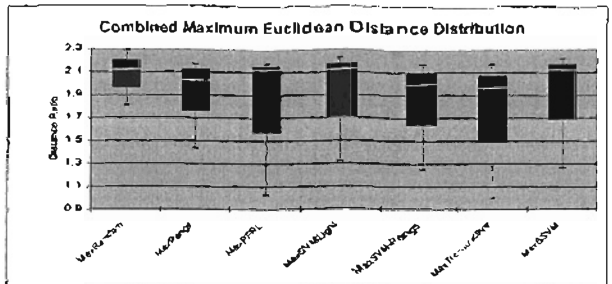
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.2063	1.2136	1.0030	1.0962	1.1564	14.8424	20.5037	21.3570
MaxRange	1.1835	1.1964	1.0000	1.0643	1.1604	16.6612	18.3524	19.8424
MaxPFRL	1.1096	1.2009	1.0099	1.0997	1.1664	16.6424	18.9640	20.0695
MaxSVMLight	1.1835	1.1834	1.0000	1.0443	1.1646	16.0516	15.3371	19.6424
MaxSVM-Range	1.1335	1.1964	1.0000	1.0543	1.1646	16.0818	15.3324	19.6424
MaxTransductive	1.1440	1.1964	1.0005	1.0456	1.0013	8.1296	14.4645	19.8424
MaxBSVM	1.1661	1.1344	1.0005	1.0709	1.1617	14.1721	16.0013	19.8424



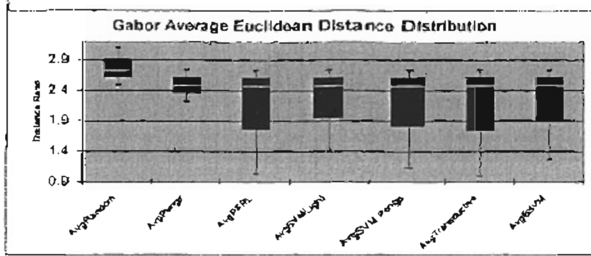
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	2.2048	2.2497	1.6370	1.8690	2.1304	113.0410	120.4776	125.8141
MaxRange	2.1291	2.1983	1.4320	1.7594	2.0660	108.5609	112.7131	116.8277
MaxPFRL	2.1480	2.1750	1.0257	1.5794	2.1154	119.0410	114.0050	127.5509
MaxSVMLight	2.1563	2.2241	1.3186	1.7186	2.1133	114.2050	118.6545	125.4131
MaxSVM-Range	2.0857	2.1450	1.2173	1.6090	2.0317	108.1105	130.5736	118.8277
MaxTransductive	2.0728	2.1683	1.0020	1.4868	1.9776	87.7574	108.2025	116.8277
MaxBSVM	2.1702	2.2241	1.2629	1.6854	2.1147	113.6235	117.0153	122.4131



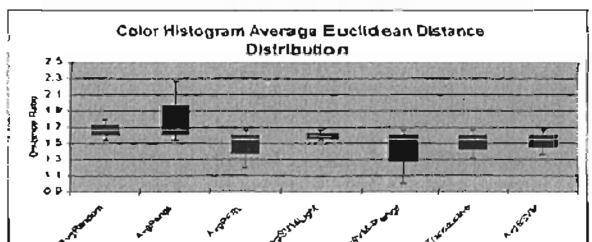
AVERAGE VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	2.9160	3.1011	2.4390	2.5119	2.7344	173.4784	184.7856	210.1127
AvgRange	2.6149	2.7348	2.2177	2.3568	2.4450	145.5000	151.4687	173.4784
AvgPFRL	2.6148	2.7348	1.0346	1.7660	2.4930	146.5000	151.4687	173.4784
AvgSVMLight	2.6143	2.7348	1.4630	1.9503	2.4350	149.5000	151.4687	173.4784
AvgSVM-Range	2.6149	2.7348	1.1354	1.8153	2.4850	146.5000	151.4687	173.4784
AvgTransductive	2.6149	2.7348	1.0090	1.7415	2.4650	146.6000	151.4687	173.4784
AvgBSVM	2.6148	2.7548	1.2546	1.8796	2.1960	146.5000	151.4837	173.4784



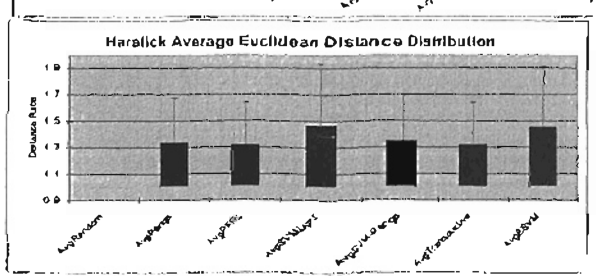
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	1.7207	1.7328	1.5331	1.5688	1.6045	66.4534	72.8875	79.2834
AvgRange	1.9660	2.2870	1.5331	1.5868	1.6045	84.4534	95.9140	121.7957
AvgPFRL	1.5008	1.6645	1.1900	1.3641	1.5331	53.5081	53.6602	66.1521
AvgSVMLight	1.6735	1.6945	1.5331	1.5574	1.5620	58.7531	62.3263	70.4634
AvgSVM-Range	1.6058	1.6745	1.0900	1.2643	1.5331	53.2081	56.6602	77.4834
AvgTransductive	1.5208	1.6645	1.3125	1.4350	1.5331	53.3081	56.6602	60.1834
AvgBSVM	1.5288	1.5645	1.3901	1.4405	1.5331	53.3084	59.5602	60.4924



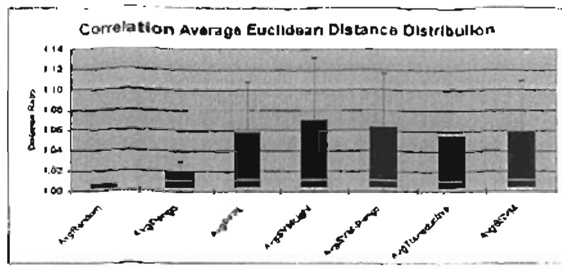
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
AvgRange	1.3363	1.6735	1.0000	1.0000	1.0000	3.0000	30.4200	83.2526
AvgPFRL	1.3101	1.6363	1.0000	1.0206	1.0000	3.0000	31.4145	61.7225
AvgSVMLight	1.4685	1.9330	1.0000	1.0000	1.0000	0.0000	48.6485	51.7778
AvgSVM-Range	1.3484	1.6362	1.0000	1.0000	1.0000	0.0000	34.9425	65.8845
AvgTransductive	1.3200	1.6400	1.0000	1.0306	1.0000	5.0000	32.0700	64.0079
AvgBSVM	1.4563	1.9106	1.0000	1.0000	1.0000	5.0000	45.3370	61.8600



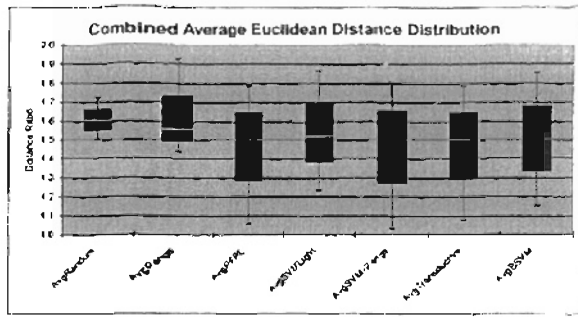
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



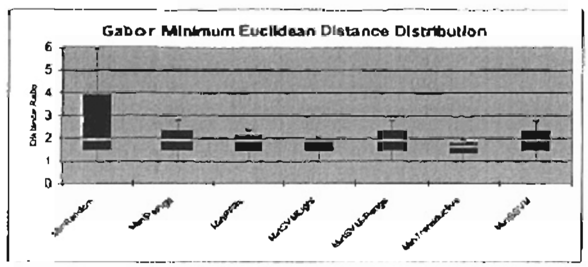
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgRFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



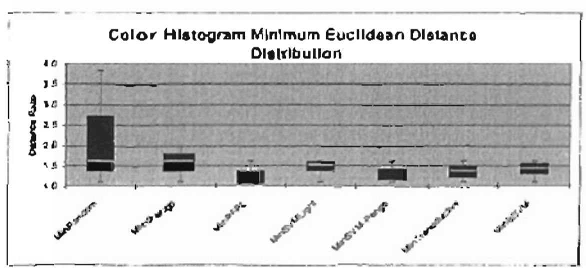
MINIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



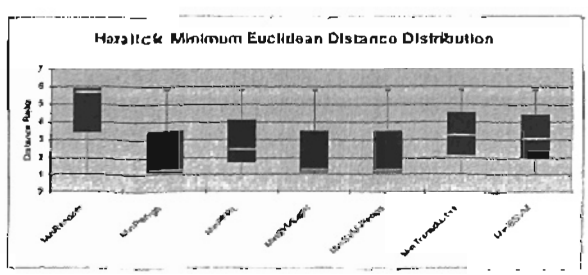
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



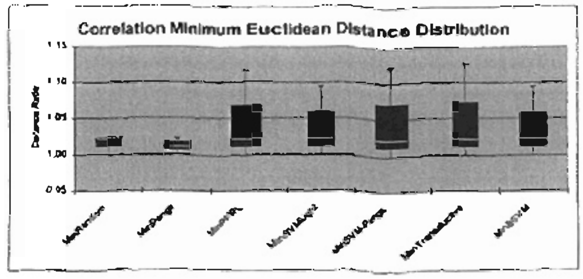
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



CORRELATION

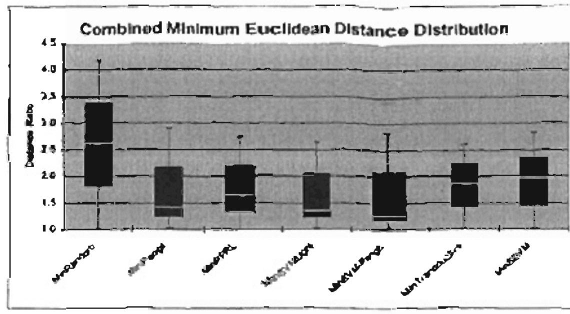
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	1.0277	1.0244	1.0000	1.0119	1.0229	1.2644	2.3660	2.4376
MinRange	1.0181	1.0229	1.0000	1.0086	1.0133	1.3242	1.6001	2.2944
MinPFRL	1.0006	1.1163	1.0000	1.0119	1.0279	2.2644	5.9601	11.4232
MinSVMLight	1.0481	1.0644	1.0000	1.0119	1.0229	[illegible]	5.9663	[illegible]
MinSVMRange	1.0728	1.1271	1.0000	1.0119	1.0229	[illegible]	7.2626	13.2714
MinTransductive	1.0743	[illegible]	1.0000	1.0140	1.0220	[illegible]	7.4149	13.5336
MinBSVM	1.0567	[illegible]	1.0000	1.0119	1.0229	2.2644	6.8663	15.4441



Correlation Minimum Euclidean Distance Distribution

ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

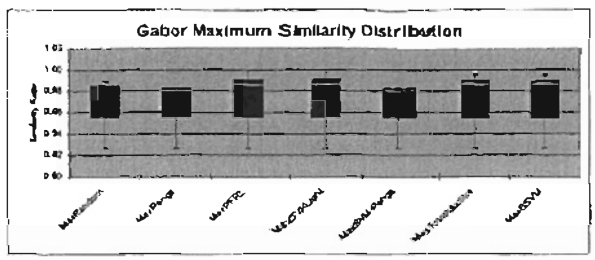
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	3.3630	4.1748	1.0248	1.8080	2.5611	150.1347	234.2961	317.4826
MinRange	2.1690	2.9363	1.0248	1.2306	1.4427	64.2722	116.8863	250.6244
MinPFRL	2.1767	2.7385	1.0000	1.3115	1.4030	80.2144	117.5740	172.8473
MinSVMLight	2.0467	2.6464	1.0244	1.2324	1.4486	43.9975	[illegible]	[illegible]
MinSVMRange	2.0846	3.0425	1.0244	1.1729	1.1304	77.0393	[illegible]	[illegible]
MinTransductive	2.2121	2.6347	1.0245	1.4211	1.6174	61.1366	121.2611	[illegible]
MinBSVM	2.2610	2.8126	1.0718	1.4466	1.9820	[illegible]	134.2117	[illegible]



Combined Minimum Euclidean Distance Distribution

DOT PRODUCT
MAXIMUM VALUE
GABOR

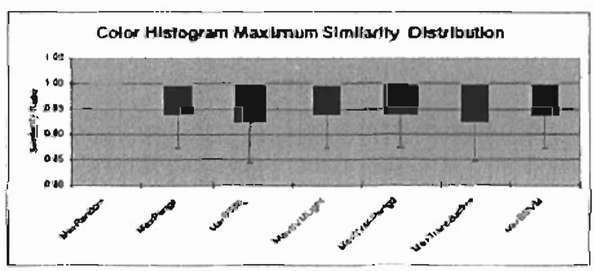
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.9830	0.9957	[illegible]	[illegible]	0.9824	1.7686	4.3776	7.6470
MaxRange	0.9820	0.9834	[illegible]	0.9748	0.9822	1.8103	4.7666	7.6470
MaxPFRL	0.9891	0.9979	[illegible]	[illegible]	0.9824	[illegible]	4.7778	7.6470
MaxSVMLight	0.9842	1.0000	[illegible]	[illegible]	0.9824	[illegible]	[illegible]	7.6470
MaxSVMRange	0.9825	0.9834	[illegible]	0.9743	0.9827	1.8103	4.7666	7.6470
MaxTransductive	0.9867	0.9950	[illegible]	[illegible]	0.9824	1.7686	[illegible]	7.6470
MaxBSVM	[illegible]	0.9948	[illegible]	[illegible]	0.9826	1.7686	[illegible]	7.6470



Gabor Maximum Similarity Distribution

COLOR HISTOGRAM

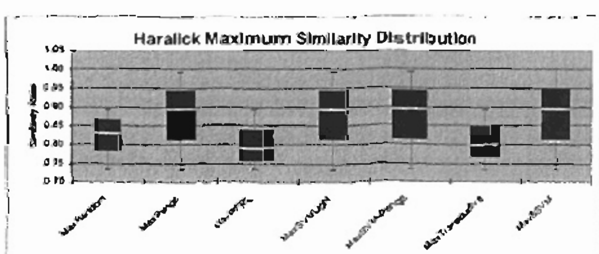
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MaxRange	1.0000	1.0000	0.8738	0.9069	1.0000	0.0000	6.7313	14.4398
MaxPFRL	1.0000	1.0000	0.8444	0.9227	1.0000	0.0000	8.4569	14.8331
MaxSVMLight	1.0000	1.0000	0.8720	0.9080	1.0000	0.0000	6.7313	14.4398
MaxSVMRange	1.0000	1.0000	0.8130	0.9299	1.0000	0.0000	6.7313	14.4398
MaxTransductive	1.0000	1.0000	0.8487	0.9215	1.0000	0.0000	4.3034	11.5012
MaxBSVM	1.0000	1.0000	0.8733	0.9367	1.0000	0.0000	6.7803	14.5016



Color Histogram Maximum Similarity Distribution

HARALICK

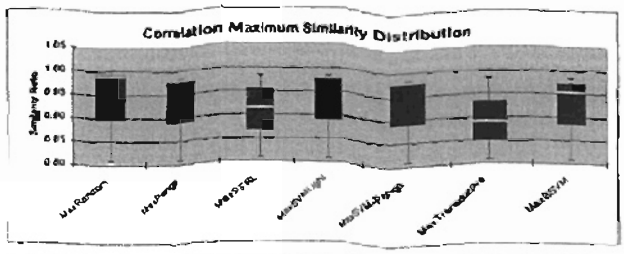
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	0.8845	0.8349	0.7325	0.7834	0.8344	10.5442	27.4409	36.5201
MaxRange	0.9420	0.9810	0.7325	0.8435	0.9446	11.7840	22.9704	36.5201
MaxPFRL	0.8300	0.8544	0.7325	0.7818	0.7828	27.3664	32.0000	36.5201
MaxSVMLight	0.9428	0.9819	0.7325	0.8355	0.8848	11.7840	22.9000	36.5201
MaxSVMRange	0.9429	0.9946	0.7325	0.8435	0.8948	11.7840	22.9000	36.5201
MaxTransductive	0.8472	0.8546	0.7324	0.7646	0.7998	25.0366	30.5262	36.5201
MaxBSVM	0.9475	1.0000	0.7325	0.8435	0.8946	11.7840	22.9000	36.5201



Haralick Maximum Similarity Distribution

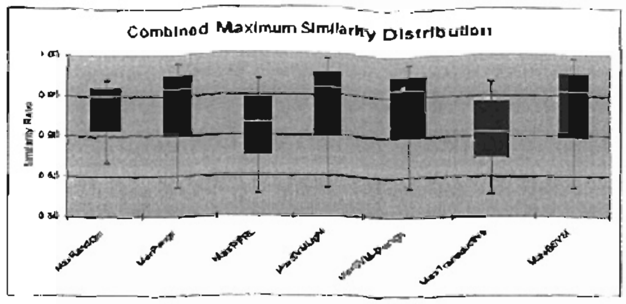
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxPrange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVM-Prange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



ALL GABOR, COLOR HISTOGRAM, HARALICK & CORRELATION COMBINED

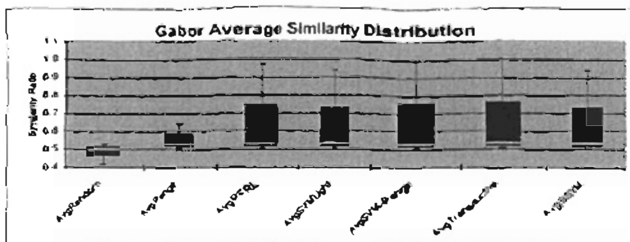
	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MaxRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxPrange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxSVM-Prange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MaxBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



AVERAGE VALUE

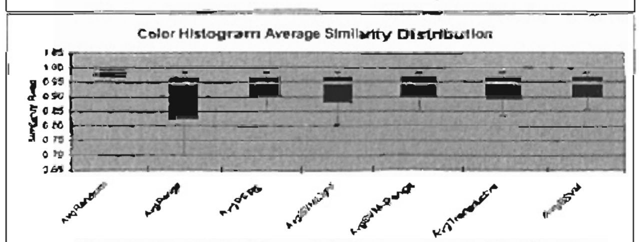
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPrange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Prange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



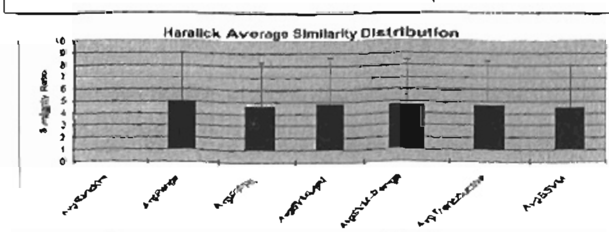
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPrange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Prange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



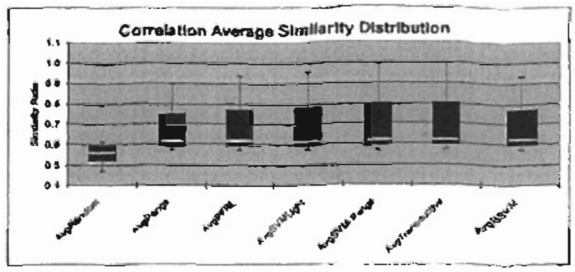
HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	1.0000	1.0000	1.0000	1.0000	1.0000	[illegible]	[illegible]	[illegible]
AvgPrange	[illegible]	[illegible]	1.0000	1.0000	1.0000	[illegible]	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	1.0000	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	1.0000	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
AvgSVM-Prange	[illegible]	[illegible]	1.0000	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	1.0000	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
AvgBSVM	[illegible]	[illegible]	1.0000	1.0000	[illegible]	[illegible]	[illegible]	[illegible]



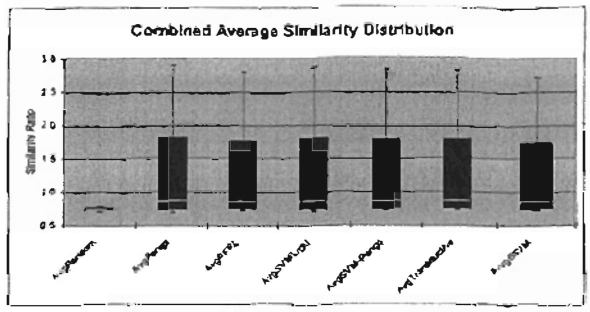
CORRELATION

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	[illegible]	0.6115	[illegible]	0.5206	0.5730	74.5289	93.0000	[illegible]
AvgRange	0.7504	0.8071	[illegible]	0.5924	0.6418	63.4429	[illegible]	74.5289
AvgPFRL	0.7737	[illegible]	[illegible]	0.5924	0.6418	63.4429	[illegible]	74.5289
AvgSVMLight	0.7546	0.8571	0.5730	[illegible]	[illegible]	63.4429	[illegible]	74.5289
AvgSVM-Range	0.8030	[illegible]	0.5730	[illegible]	[illegible]	63.4429	[illegible]	74.5289
AvgTransductive	0.8050	1.0000	0.5730	0.5924	0.6118	63.4429	[illegible]	74.5289
AvgSVM	0.7223	0.8326	[illegible]	[illegible]	[illegible]	63.4429	[illegible]	74.5289



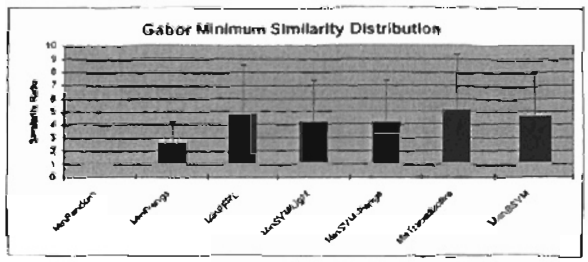
ALL GABOR, COLOR HISTOGRAM, HARALICK, & CORRELATION COMBINED

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
AvgRandom	0.7763	0.7947	0.7045	0.7376	0.7650	[illegible]	[illegible]	[illegible]
AvgRange	[illegible]	2.6600	[illegible]	0.7331	0.7711	274.4787	[illegible]	[illegible]
AvgPFRL	[illegible]	[illegible]	0.7324	0.7530	0.7711	274.4787	[illegible]	[illegible]
AvgSVMLight	[illegible]	[illegible]	0.7315	[illegible]	0.7711	[illegible]	[illegible]	[illegible]
AvgSVM-Range	[illegible]	[illegible]	0.7320	[illegible]	0.7711	[illegible]	[illegible]	[illegible]
AvgTransductive	[illegible]	[illegible]	0.7385	[illegible]	0.7711	[illegible]	[illegible]	[illegible]
AvgSVM	[illegible]	[illegible]	[illegible]	0.7530	0.7711	[illegible]	[illegible]	[illegible]



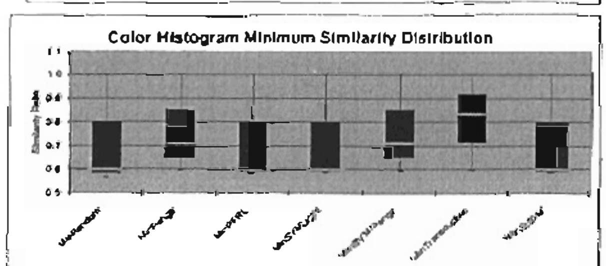
MINIMUM VALUE
GABOR

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	1.0000	1.0000	[illegible]	[illegible]	[illegible]	0.0000	0.0000	0.0000
MinRange	[illegible]	4.7169	[illegible]	[illegible]	[illegible]	[illegible]	0.0000	0.0000
MinPFRL	[illegible]	8.5241	1.6000	1.0000	1.0000	0.0000	0.0000	0.0000
MinSVMLight	[illegible]	7.3298	1.0000	1.0000	1.0000	[illegible]	0.0000	0.0000
MinSVM-Range	[illegible]	7.3298	1.0000	1.0000	1.0000	[illegible]	0.0000	0.0000
MinTransductive	[illegible]	[illegible]	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinSVM	[illegible]	8.4298	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000



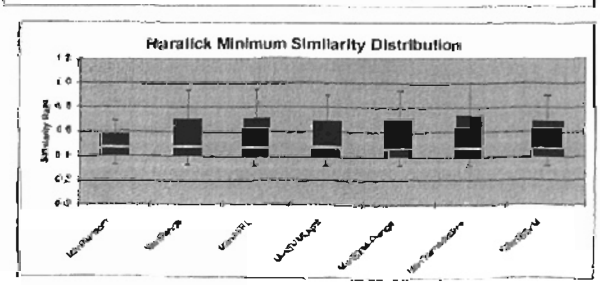
COLOR HISTOGRAM

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	1.0000	[illegible]	0.7161	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



HARALICK

	High	Max	Min	Low	Med	1/2Prob	3/4Prob	WorstCase
MinRandom	0.5420	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinRange	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinPFRL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVMLight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM-Range	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinTransductive	[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MinSVM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



CORRELATION

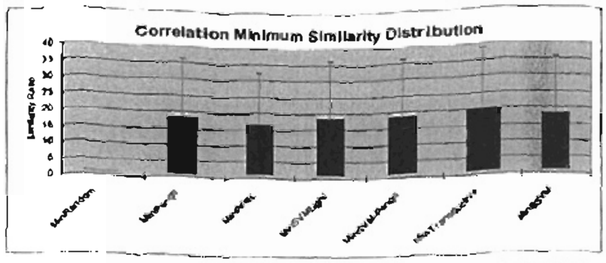
	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
MinRandom	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinRange	18.5295	30.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinFIRL	16.0270	32.3456	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinSVMLight	18.5295	36.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinSVM-Range	18.5295	36.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinTransductive	18.7312	35.4424	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
MinBSVM	14.2956	35.1111	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000

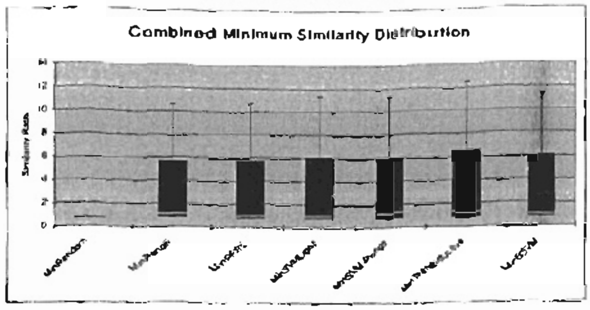
ALL GABOR, COLOR HISTOGRAM, PARALLEL & CORRELATION COMBINED

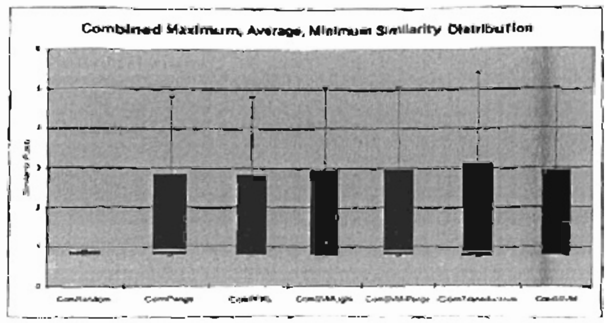
	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
MinRandom	0.6446	0.9821	0.7370	0.7451	0.7876	1520.5585	1660.5169	1621.6321
MinRange	5.1753	10.9538	0.7388	0.7605	0.7871	1480.3076	1520.3494	1604.4261
MinFIRL	5.7208	10.6779	0.7215	0.7475	0.7876	1520.5565	1564.3021	1616.2645
MinSVMLight	6.6446	11.5215	0.7276	0.7475	0.7876	1520.5585	1564.1000	1615.0457
MinSVM-Range	6.0641	11.3071	0.7268	0.7635	0.7837	1480.8674	1579.3431	1604.4249
MinTransductive	6.6539	12.4035	0.7284	0.7790	0.8082	1401.9180	1486.7768	1604.4246
MinBSVM	6.0780	11.3844	0.7274	0.7476	0.7876	1520.5585	1564.1000	1610.0662

ALL SCIENTIFIC DATA DOT PRODUCT MAX, MIN, AVG COMBINED

	High	Max	Min	Low	Med	[illegible]	[illegible]	WorstCase
ComRandom	0.9027	0.9325	0.7443	0.7670	0.8214	558.0210	578.0861	605.4005
ComRange	2.8773	4.8106	0.7533	0.7664	0.8435	541.8673	577.0886	618.6260
ComFIRL	2.4154	4.8186	0.7635	0.7516	0.8267	544.5536	583.7480	600.4000
ComSVMLight	2.5473	5.0082	0.7615	0.7875	0.8331	544.2708	576.0098	610.9821
ComSVM-Range	2.9645	5.0535	0.7541	0.8046	0.8431	541.8072	572.7090	606.9082
ComTransductive	3.1751	5.4177	0.7685	0.8008	0.8350	545.1042	578.6426	605.2888
ComBSVM	2.9314	5.0281	0.7650	0.7992	0.8324	546.0374	577.2704	601.4033







VITA

Patricia Jusuf

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Master of Science

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Experience: Employed as a graduate teaching assistant at Computer Science Department, Oklahoma State University in 2001.