

Imbalanced Learning Methods

Problem Definition Approach

- Imbalanced evaluation metrics

In this study we measure:

1. Accuracy = $\frac{TP+TN}{TP+TN+FP+FN}$
2. Geometric mean (G-mean) = $\sqrt{\frac{TP}{TP+FN} * \frac{TN}{TN+FP}}$
3. Area Under the Receiver Operating Characteristic Curve (AUC)

Data Processing Approach

- Over-sampling
- Under-sampling
- Combination of advanced resampling methods

In this study we explore variations of:

1. Synthetic Minority Oversampling Technique
2. Generative Adversarial Networks

Algorithmic Approach

- Cost and bias sensitive methods
- Minority class focused algorithms
- Ensemble learning methods

