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Imbalanced Classification Problems: A Comparative Study of Non-ensemble and Ensemble-Based Approaches

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Abstract

The imbalanced classification problem presents significant challenges for machine learning techniques as it directly affects the efficiency of the classification model. This problem exists when one class has fewer instances as compared with other classes. Most classification algorithms are usually inclined to the majority class and reject the minority class by considering it an outlier. This problem is common in many fields such as medical science, fraud detection, network intrusion, etc., which has received large attraction from data mining researchers and practitioners during these years. This paper presents a formal description of