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Optimizing Credit Risk Assessment Through Multiple Tools

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Abstract

Accurate credit score assessment is critical for making educated financial decisions and managing risks. To improve credit risk assessment and client segmentation, this article offers a thorough examination using machine learning techniques such as K-Nearest Neighbors (KNN), Decision Trees, Random Forest, and K-Means Clustering. Credit score misclassification might result in less-than-ideal loan approvals and more financial risk. The Decision Tree model demonstrated its ability to differentiate between different credit score categories by improving the baseline accuracy of the KNN model, which was 69.6%, to 75.5%. With 81% accuracy, the Random Forest model demonstrated balanced performance in predicting "Good," "Standard," and "Poor" credit scores. Furthermore, K-Means Clustering provided useful insights for tailored financial planning by identifying discrete client categories based on financial behavior. This combined strategy represents a breakthrough in consumer segmentation and credit score prediction, leading to more individualized and successful financial plans.

Conference Track

Finance and Investment