Credit Risk Prediction - PDF Report

Business Problem

In the complex world of finance, the assessment and management of credit risk stand as important elements in maintaining the stability and profitability of lending institutions. Credit risk, the possibility that a borrower will default on their financial obligations, has far-reaching implications not only for individual entities but also for the global economy.The goal is to build a predictive model using credit history.

Methodology

- **Data Cleaning**: Removed missing values, ensured data consistency.
- **EDA**: Used seaborn/matplotlib for visual insights.
- **Modeling**: Logistic Regression, Random Forest, SVM, Decision Tree Classifier, XGBClassifier with SMOTE balancing.
- **Evaluation**: Used accuracy and F1 score metrics.

Insights

- Random Forest performed the best in terms of precision.
- PCA didn't improve model performance so skipped performing it.
- In order to classify correctly, Random Forest is the best model.

Conclusion

Random Forest with SMOTE balancing provided the most reliable credit risk prediction. Future work can explore deep learning or time-series based approaches.