Report Phase 1
Data Intensive Computing(CSE 587 , Fall 2023)

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Enhancing Credit Default Prediction for Improved Lending Practices

1. Problem Statement

The challenge of accurately predicting credit card defaults is a fundamental concern in consumer lending. The project aims to address this issue, by developing machine, learning models, capable of outperforming existing methods, thereby enhancing risk assessment practices and ultimately improving the learning experience for both financial institutions and customers.

Background:

Credit card default prediction is pivotal to the sound operation of consumer lending businesses. It determines whether the borrowers will repay their credit card balances promptly which, in turn, influences lending decisions, customer experiences and financial stability. Accurate prediction, mitigate risk, minimizes loss, and foster more efficient lending processes. The significance of this problem lies in its direct impact on the profitability, sustainability and customer satisfaction of lending institutions. Defaults can result in substantial financial losses and, in some cases even threaten the viability of these institutions.

Potential Contributions:

1. Optimize lending decisions: Enhanced predictive models enable lending institutions to make better informed decisions regarding credit approvals and lending limits. This contributes to improved risk management and reduced default rates.

2. Improved customer experience: More accurate predictions can lead to fairer credit decisions, resulting in increased approval rates for credit card applications. This

intern provides customers with greater access to financial services and smoother application process.

3. Enhanced Financial Stability: Lower default rates and better risk management can have a direct positive impact on the financial stability of lending institutions. Reduced defaults translate into reduced losses and improved profitability.

4. Foster Innovation: The development of advanced machine learning model encourages innovation within the lending industry. This project's findings can inspire further research and technological advancements in credit risk assessment.

5. Strengthen Industry competitiveness: Lending institutions that adopt more effective credit default prediction models gain a competitive edge in the market. This can lead to improve market share, and sustained growth.

Data Source:

https://www.kaggle.com/datasets/hotsonhonet/amex-competition/download?datasetVersionNumber=1