AI-Based Credit Risk Assessment for Small Business Lending

ABSTRACT

This project aims to develop an intelligent and data-driven credit evaluation system to enhance the accuracy of risk assessment for small enterprises. Traditional credit assessment models often rely on limited financial history and rigid evaluation criteria, making it difficult for small businesses to secure loans. By leveraging machine learning algorithms and predictive analytics, this project will analyze diverse data sources, including financial records, transaction history, market trends, and alternative data such as customer reviews and social media sentiment. This approach will enable lenders to make more informed and fair lending decisions, reducing the likelihood of defaults while promoting financial inclusion.

It will focus on designing an AI-powered risk assessment framework that integrates feature engineering, model training, and explainability techniques to ensure transparency in decision-making. By utilizing both supervised and unsupervised learning models, the system will classify borrowers based on their creditworthiness, providing risk scores to help financial institutions optimize loan approvals. The model will be evaluated on real-world datasets to ensure robustness and adaptability across different business environments. This AI-driven approach will not only streamline the loan approval process but also foster economic growth by enabling fair and efficient credit access for small businesses.

Key Features:

- AI-Powered Risk Assessment
- Financial Inclusion Enhancement
- Fraud Detection and Anomaly Detection
- Automated Credit Scoring System

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Coordinator Name(s): Signature(s) of the coordinator(s):

Software Requirements

• Languages: Python

• Database: MySQL

• Tools/IDE: Jupyter Notebook, PyCharm

Hardware Requirements

• System Specifications: Minimum 8GB RAM, 256GB SSD

• Operating System: Windows 10/11, Linux (Ubuntu), or macOS

• Processor: Minimum Intel i5 (10th Gen)