Machine Learning Project

Name: Muhammad Hassan Raza

Predictive modelling for loan repayment peer to peer landing platforms

Introduction

This report aims to analyze publicly available data from LendingClub.com a platform that connects Borrowers with investors. The goal is to create a model to predict whether Borrowers will payback their loan is full. By developing such a model, investors can make informed decision to maximize return while minimizing risks.

Problem statement

LendingClubs plays a crucial role in facilitating landing activities by matching Borrowers with investors. however, investors need to assess the risk associated with each borrower to make profitable Investment decisions. therefore the problem at hand is to develop a predictive model that can accurately classify Borrowers into two categories those who pay back their loan in full and those who don't.

Methodology:

Dataset Discussion:

The dataset includes the following attributes

credit.policy: Binary variable indicating if the borrower meets the credit underwriting criteria of LendingClub.

int.rate: Interest rate on the loan.

Purpose: The purpose of the loan(e.g,debt consolidation,credit card,home improvement)

installment: Monthly payment amount.

log.annual.inc: Natural logarithm of the borrower's annual income.

dti: Debt-to-income ratio.

fico: FICO credit score.

days.with.cr.line: Number of days with a credit line.

revol.bal: Revolving balance (i.e., outstanding balance on credit cards).

revol.util: Revolving line utilization rate (i.e., ratio of credit card balance to credit limit).

inq.last.6mths: Number of inquiries in the last 6 months.

delinq.2yrs: Number of delinquencies in the last 2 years.

pub.rec: Number of derogatory public records.

not.fully.paid: Binary variable indicating if the loan was not fully paid.

Project timeline:

Data collection and preprocessing: 1 week

Data Visualization and Exploratory Data Analysis: 1 week

Machine learning model development: 2 weeks

Model training and performance evaluation: 1 week

Writing and implementation: 1 week

Conclusion:

The purpose of this project is to develop a powerful predictive model to help investors make informed decisions regarding credit investments. By using machine learning techniques and analyzing historical loan data, our goal is to create a model that accurately predicts a borrower's likelihood of repaying their loan in full. The model has the potential to improve investment strategies and minimize credit risk.