Lendingclub's loan default prediction

Rafiq Islam

2023-02-23

Table of contents

Notebook

Project Overview

LendingClub is a U.S.-based financial services company that initially began as a peer-to-peer (P2P) lending platform, allowing individual investors to lend directly to individual borrowers through a marketplace. Founded in 2006, it grew quickly to become one of the largest and most popular P2P lending platforms, helping connect borrowers in need of personal loans with investors looking for alternative investment opportunities. LendingClub has been known for its transparent data-sharing practices, making anonymized loan data available to researchers, data scientists, and investors. This data is widely used in financial research, especially for predictive modeling of loan risk and borrower behavior. The aim of this data science project is to build a machine learning model to predict the likelihood of a loan default.

More information about LendingClub

1. **P2P Lending Model (Early Focus):**

- Borrowers could apply for loans, typically unsecured personal loans, through LendingClub's platform.
- Loans were then funded by individual investors who could review borrowers' profiles, risk grades, and other financial information before committing funds.
- The model offered borrowers a way to access loans outside traditional banks, often at lower interest rates, and allowed investors to diversify by spreading investments across multiple loans.

2. **Risk and Return:**

- LendingClub assigned credit grades (A–G) to each loan based on creditworthiness, which affected interest rates. Higher risk meant potentially higher returns for investors but also higher chances of default.
- Investors bore the risk if a borrower defaulted, which was a notable risk factor compared to FDIC-insured deposits.

3. **Shift to a Bank Model:**

- Over time, LendingClub transitioned away from P2P lending and restructured as a more traditional bank, obtaining a bank charter in 2021.
- It now offers banking products, such as high-yield savings accounts, and operates more like a digital bank while still focusing on lending products.

4. **Borrower and Loan Profiles:**

- LendingClub primarily focuses on personal loans for debt consolidation, credit card refinancing, home improvement, and other purposes.
- Borrowers' profiles typically include information on income, credit score, debt-to-income ratio, and loan purpose, which is used for assessing risk.

Dataset

Stakeholders

Key Performance Indicators (KPIs) of LendingClub

Modeling

Results and Outcome

Future Directions