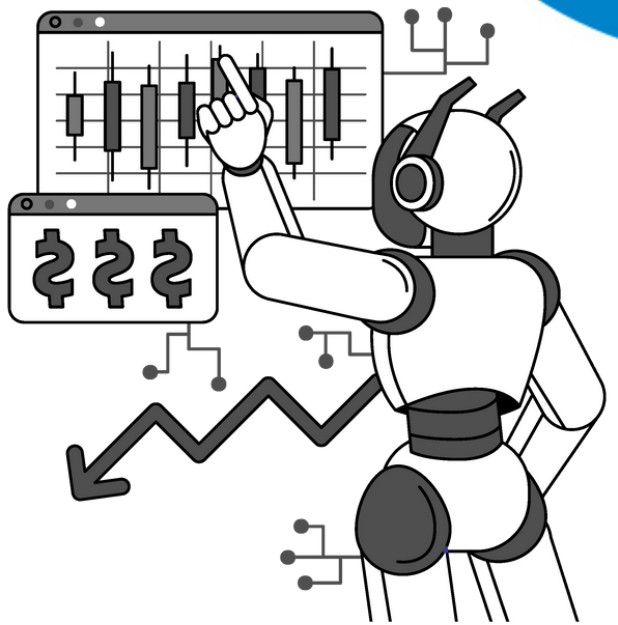
ZUCI SYSTEMS
PERFECTION. ALWAYS.

Minimized non-performing assets using machine learning for a century-year-old bank in Asia

Machine Learning Model Development Case Study

Our banking client aimed to reduce its non-performing assets in the term insurance portfolio by constructing an ML model capable of predicting NPA profiles during the loan disbursement stage. Their primary goal was to equip the loan disbursement manager with a mechanism to identify the profiles who are prone to becoming NPAs.

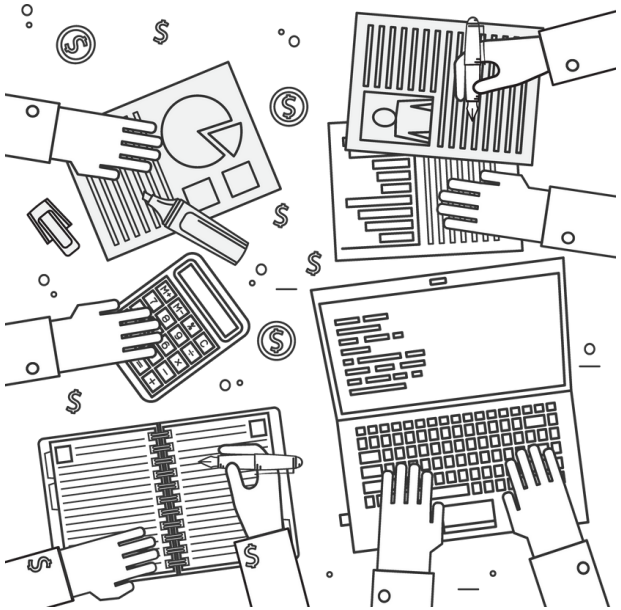


Meet Our Customer

Dating back to the 1940s, our customer is one of the oldest banks in South Asia, offering a wide range of banking products and services catering to MSMEs, corporates, and individuals.

Problem Statement

- To implement measures to effectively mitigate the risk of NPAs within the term insurance portfolio for enhanced portfolio performance and sustained profitability.
- To establish a robust Acquisition Risk Score (ARS) system for evaluating potential customers' creditworthiness and likelihood of default, enabling loan approvers to make informed decisions and minimize NPA exposure.
- To implement a seamless integration of the ARS into the bank's loan issuance system to perform comprehensive risk assessment data during the loan approval process.



Zuci's Approach to Reduce the NPA

Data Analysis for Generating ARS

- Our team conducted a comprehensive analysis of three years' term loan profiles, focusing on over 100 customer features across NPA and non-NPA accounts.
- This analysis allowed us to uncover patterns and correlations between customer data and NPA risk, providing valuable insights for optimizing the loan approval process.

Statistical Model Development & Training for Risk Assessment

- Leveraging the insights gained from data analysis, we developed a streamlined approach to automate feature selection.
- By training statistical models on key risk indicators such as debt equity ratio and interest coverage ratio, we created a predictive ARS tool capable of assessing the risk profile of new applicants, thereby improving the bank's ability to identify and mitigate potential NPAs.

ARS Integration

- To optimize their loan approval workflow, we integrated the ARS into their loan issuance system using an API-driven approach.
- This integration empowered the loan approvers to access ARS scores directly within their workflow, enabling them to make more informed decisions and prioritize high-risk profiles efficiently, ultimately enhancing their risk management capabilities.

Tech Stack

python™

jupyter

statsmodels

NumPy

pandas

Key Achievements

Achieved a

20%

reduction in NPAs (within the term insurance portfolio) through the implementation of our predictive model.

Reduced the loan approval time by

10%

driving enhanced efficiency and significant cost savings in operational expenses.

ZUCI SYSTEMS
PERFECTION. ALWAYS.

Want to create robust insights of your organization's data across platforms?

Get in touch with Zuci Systems.

Schedule a call →

USA & Canada

Texas
+1 (469) 320-1156

Toronto
+1 (343) 309-5455

Europe

Belgium & Geneva
+32 477411912

India

Chennai
+91 (44) 69178900

sales@zucisystems.com

www.zucisystems.com