

Presented by Sama Amr

Enhancing Credit Risk Assessment with Machine Learning

Loan Default Prediction

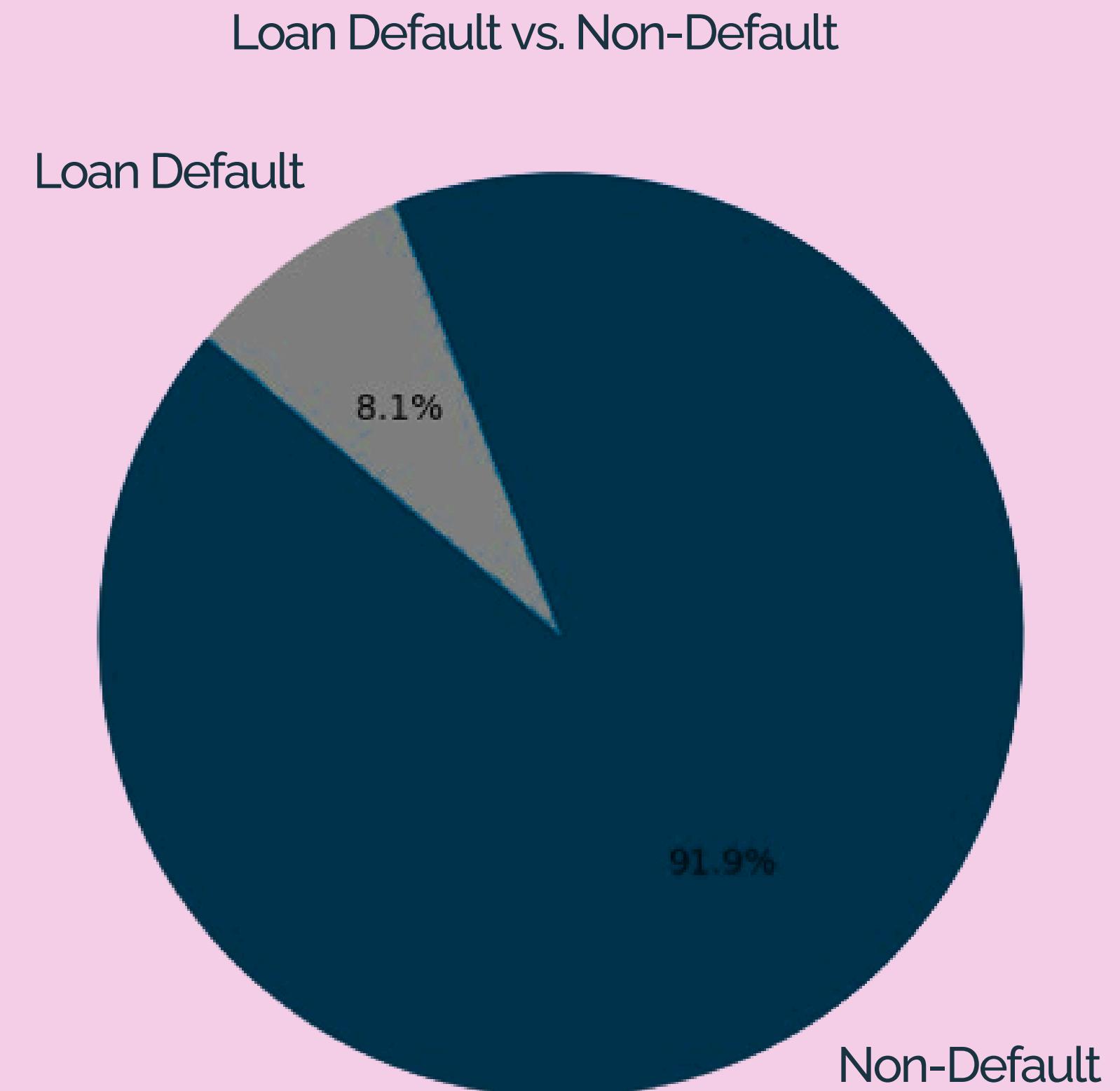
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Objective & Data Overview

Objective: Predict loan default risk. (Binary Classification)

Problem: Imbalanced dataset (more non-defaults than defaults)

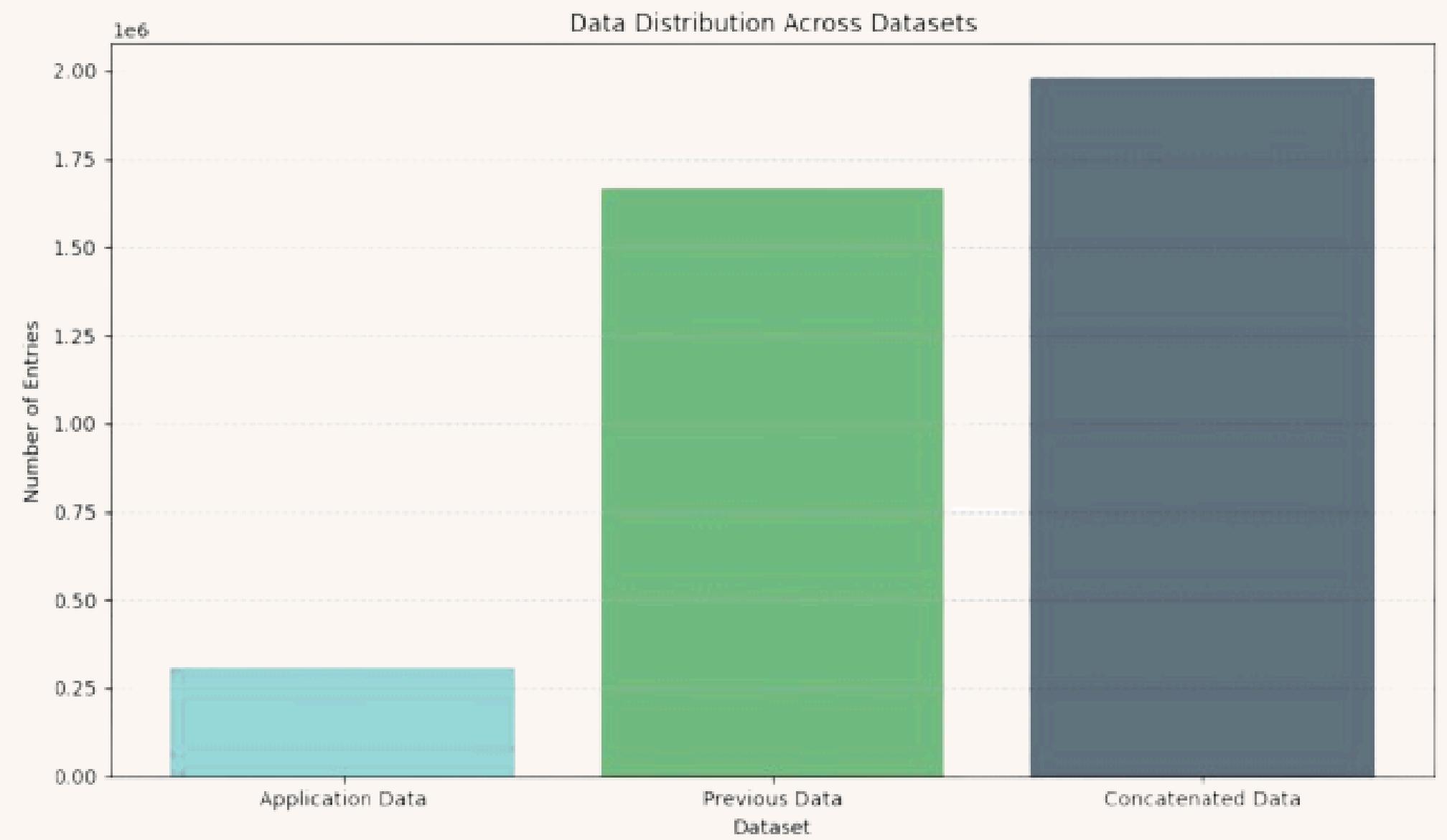


Data Overview

Application Data: 307,511 entries,
122 columns

Previous Data: 1,670,214 entries, 37
columns

Merged Data: Comprehensive
combined dataset

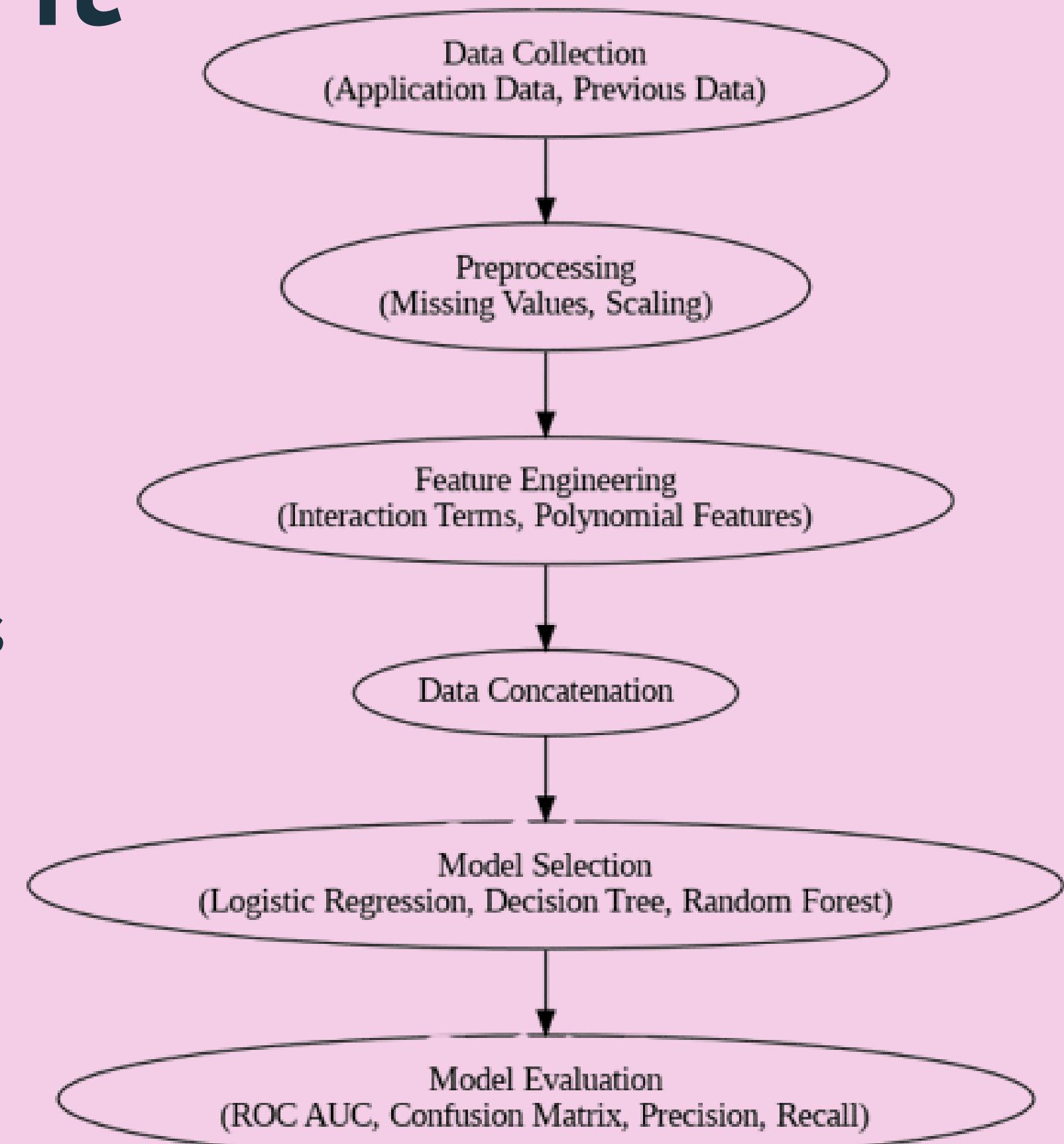
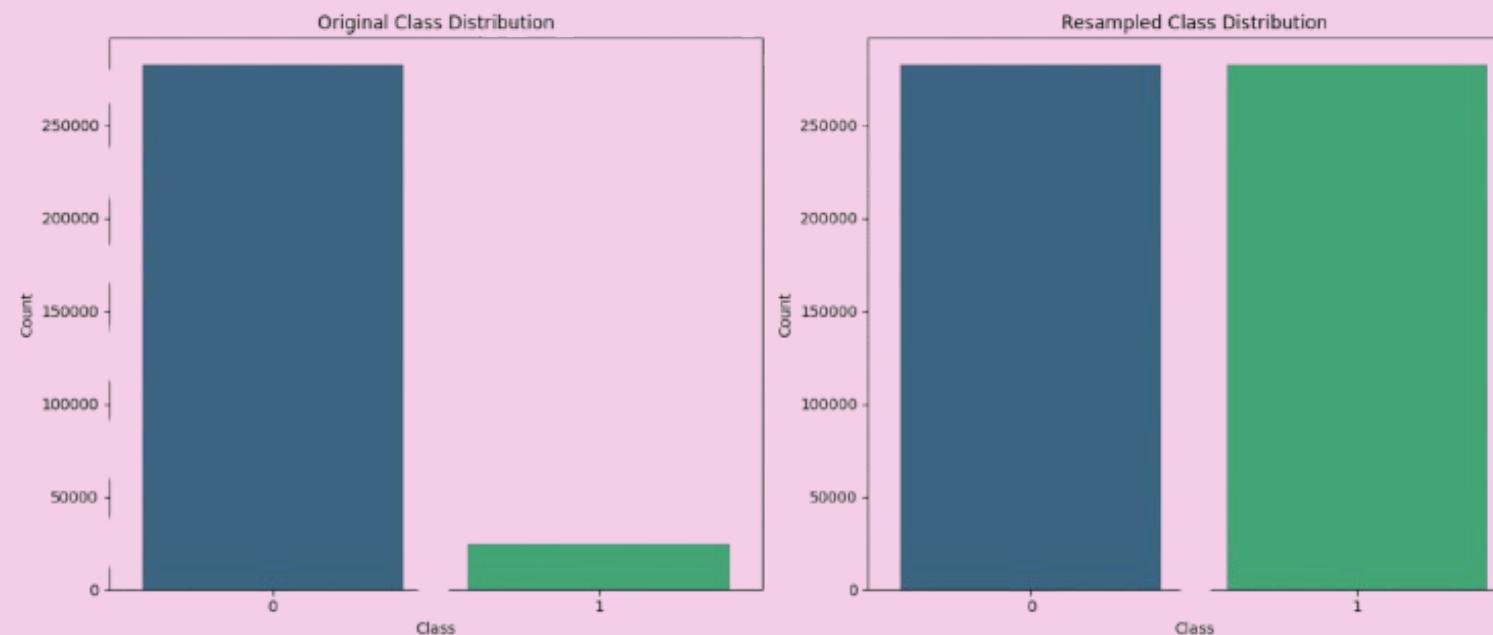


Overview of current trends

Logistic Regression: Linear boundaries.

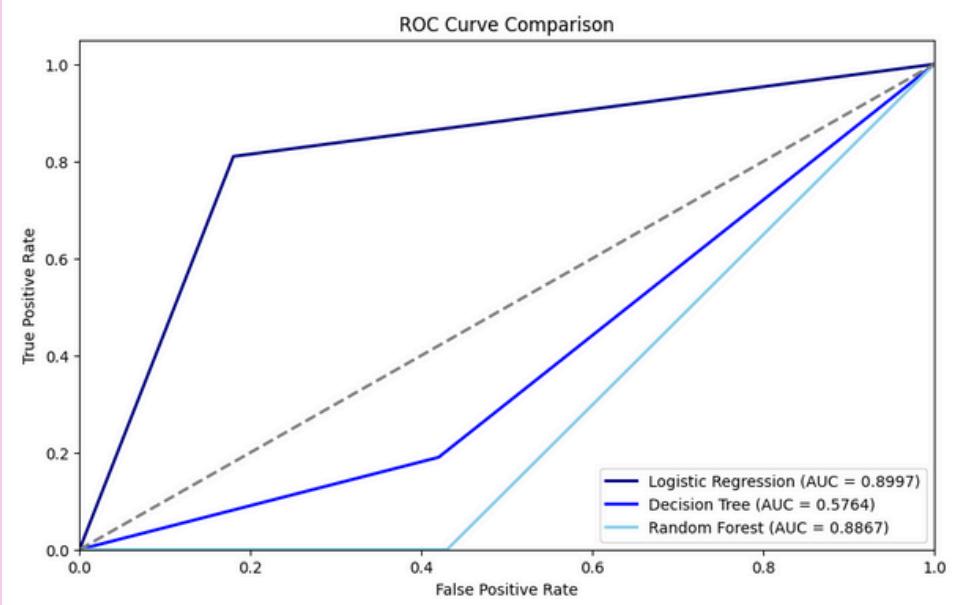
Decision Tree: Handles non-linear relationships.

Random Forest: Aggregates multiple trees

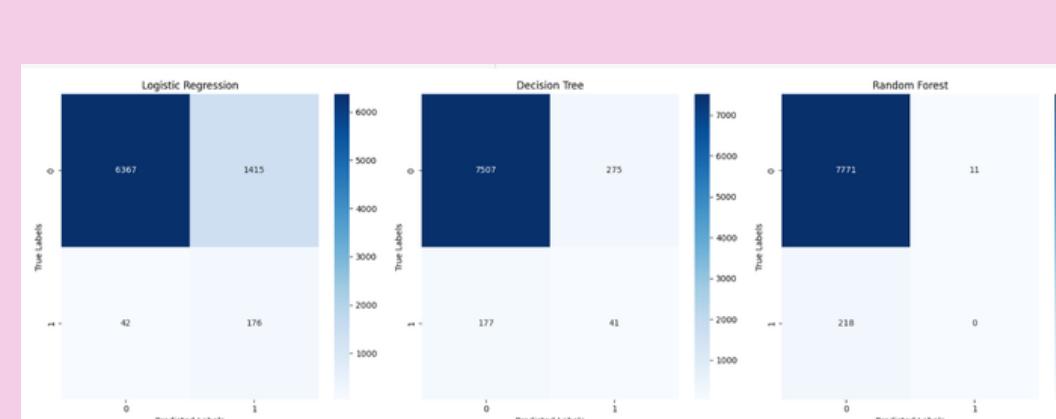


Performance Evaluation

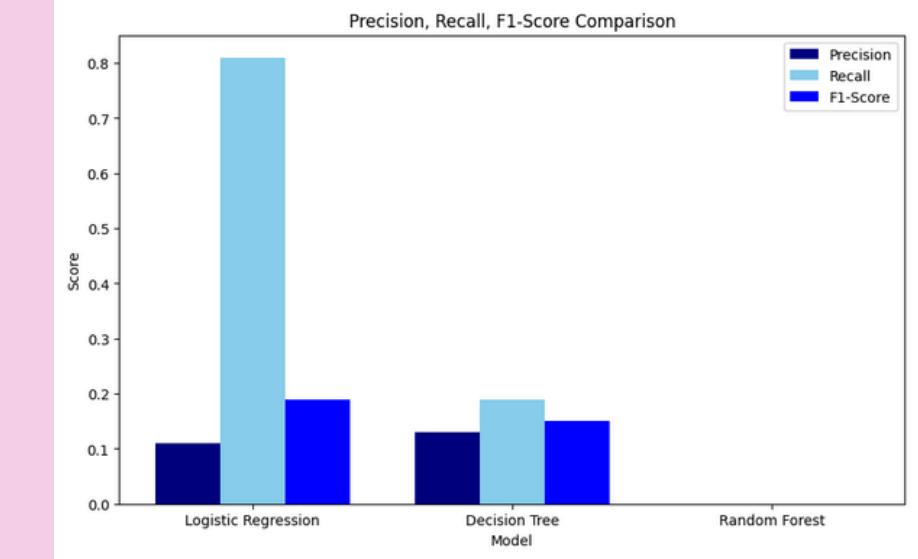
ROC AUC Score



Confusion Matrix



Precision, Recall, F1-Score



Business Impact & Future Work

01. Business KPIs

- Improved Risk Management
- Targeted Marketing
- Cost Savings

02. Future Enhancements

- Model Refinement
- Feature Improvement
- Cross-Validation

Thank You!