



# Credit Risk Modeling Presentation

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Author



# Project Overview

01

## Title

Credit Risk Classification Using Machine Learning

02

## Objective

Predict loan default risk to assist credit decision-making

03

## Data

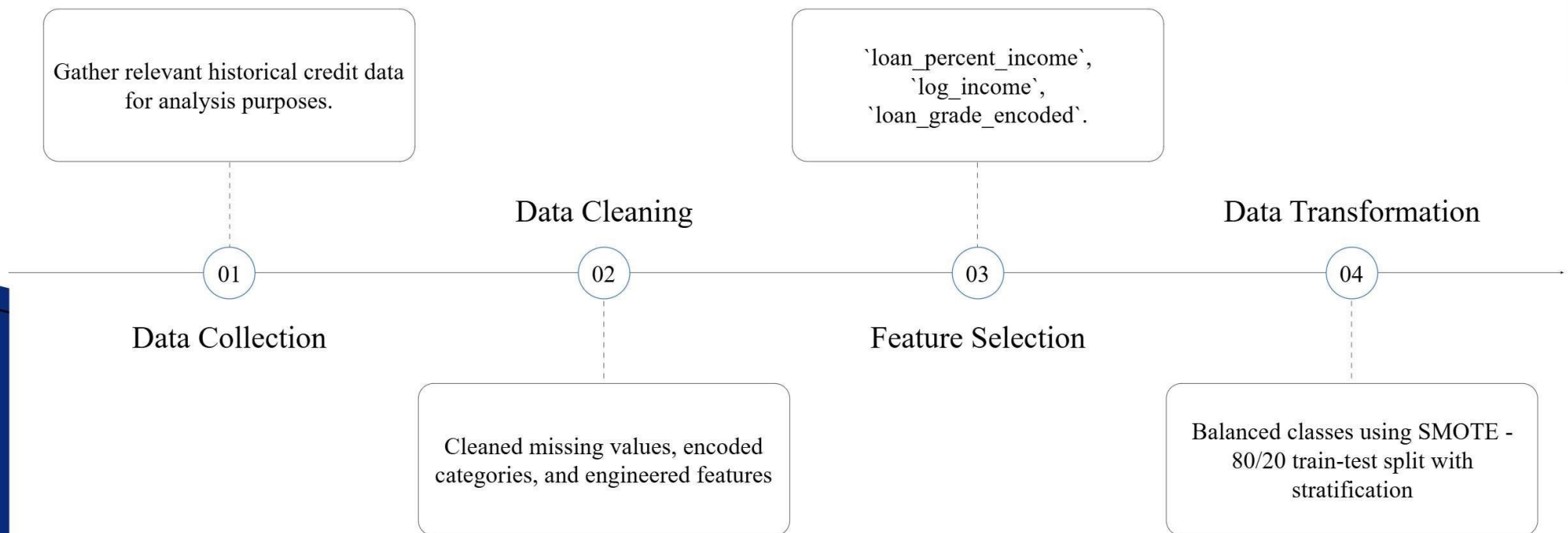
Borrower demographics, loan details, repayment status

04

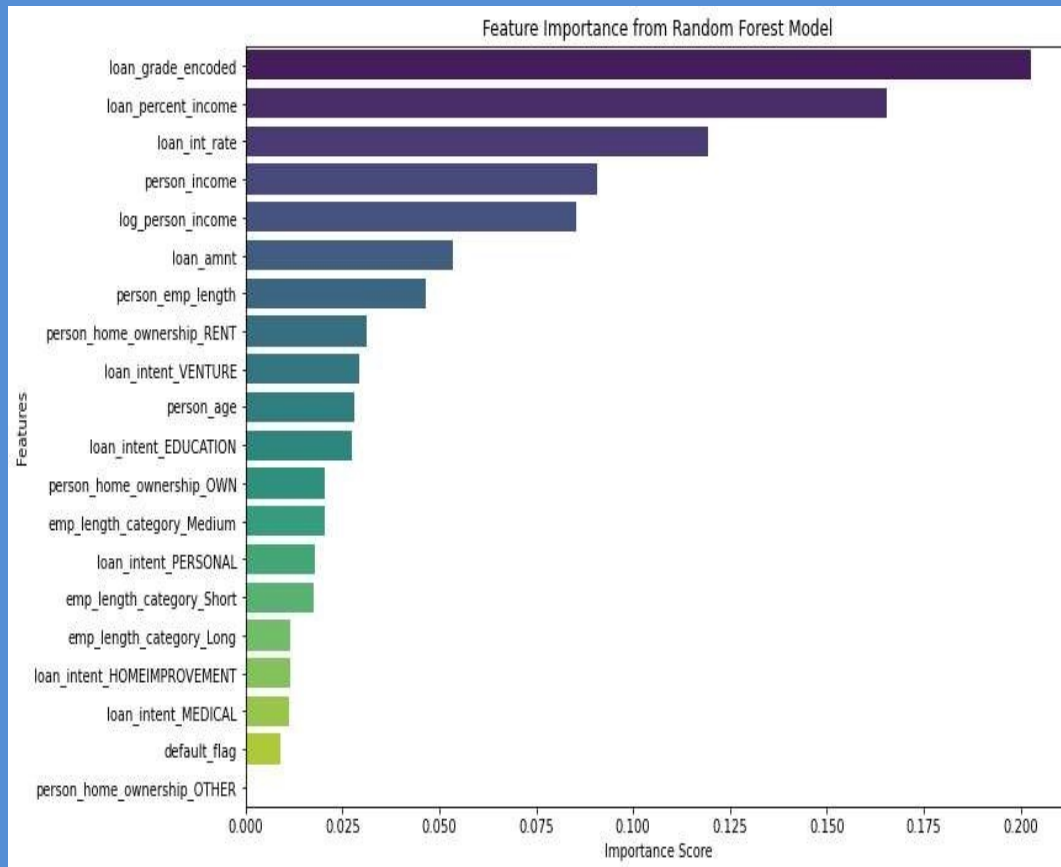
## Models

Random Forest & Logistic Regression

# Data Preparation & Feature Engineering

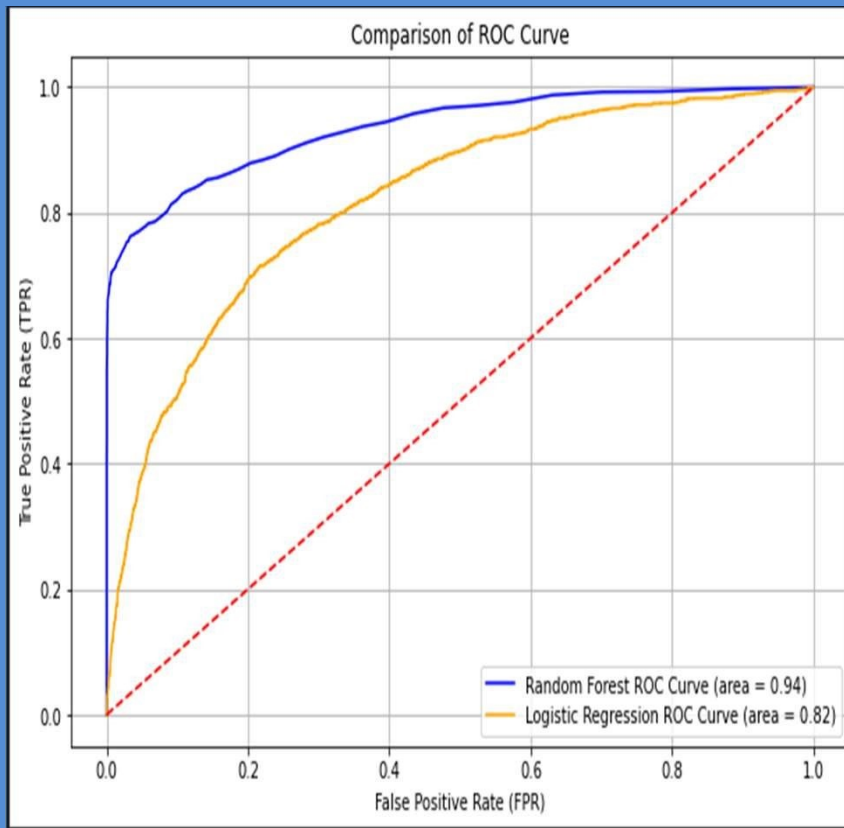


# Feature Importance Insights



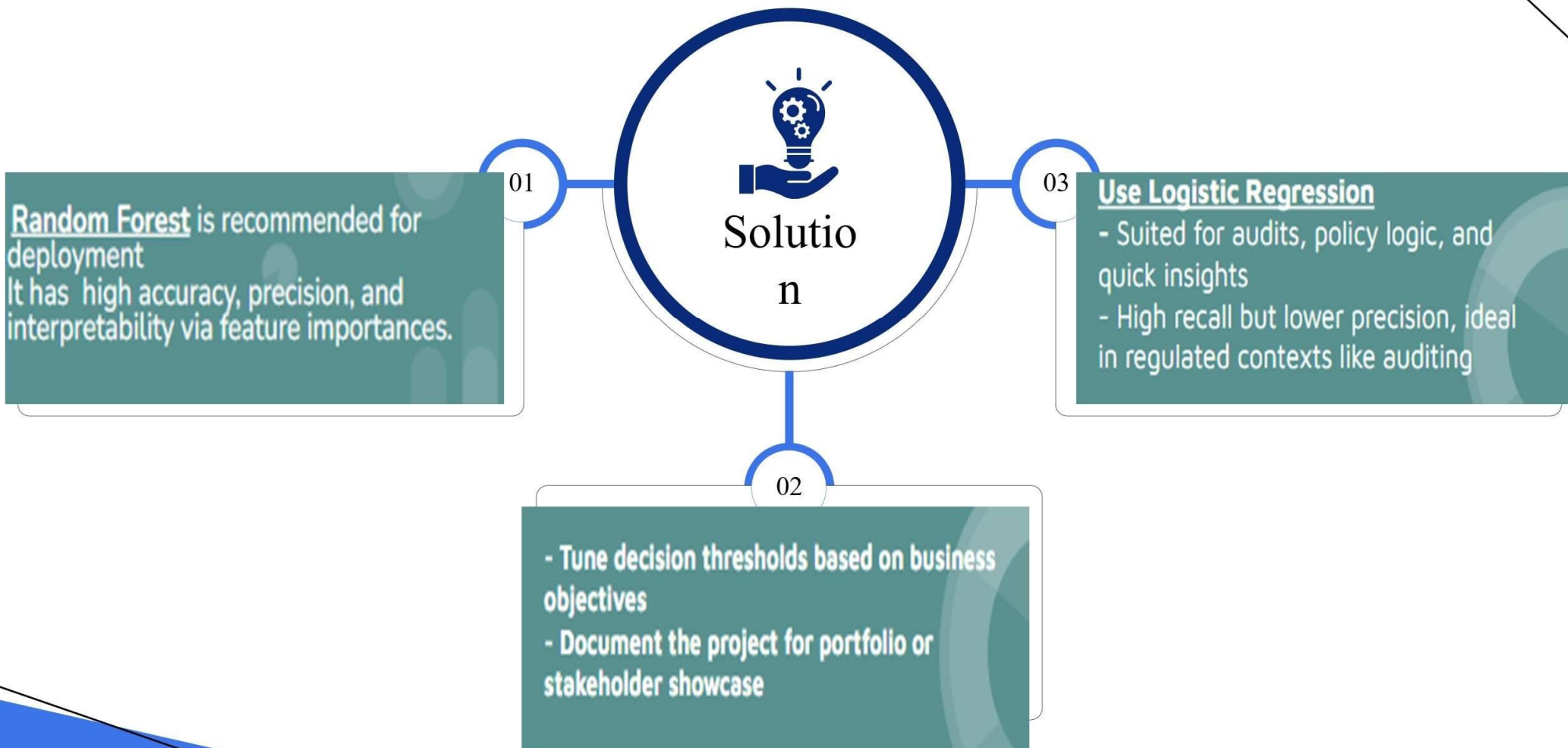
- - **Top drivers:** loan grade-encoded, loan-percent-income, loan-int-rate
- - Feature importance aligns with lending intuition: affordability, creditworthiness, repayment terms
- - Adds credibility to model logic and stakeholder trust

# Model Comparison Summary: Random Forest vs Logistic Regression



Metric	Random Forest	Logistic Regression	Interpretation Summary
Accuracy	93%	74%	RF shows high overall correctness; LR is moderately reliable
Precision (0)	93% (non-defaulters)	91% (non-defaulters)	Both models predict safe borrowers well
Precision (1)	92% (defaulters)	45% (defaulters)	RF is much better at accurately flagging risky borrowers
Recall (0)	98%	74%	RF preserves almost all safe lending opportunities
Recall (1)	72%	75%	LR slightly outperforms RF in identifying defaulters
F1 Score (0)	0.95	0.82	RF maintains exceptional consistency for non-defaulters
F1 Score (1)	0.81	0.56	RF is more balanced for defaulters; LR recall-driven but with weaker precision
ROC-AUC Score	0.94	0.82	RF demonstrates stronger separation and confidence in predictions

# Recommendation Block





# Thank You



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