



# CLASSIFYING CREDIT CARD DEFAULT

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# THE PROBLEM

- 83% of Americans own at least one credit card
- Almost 50% of households carry balances over month to month; 60% for over a year
- Over 14 million people in the U.S. have at least \$10,000 in credit card debt
- The average credit card debt of U.S. families is \$6,270
- The average American has 3.8 credit cards



# THE DATA

## American Express Credit Card Default Dataset

- 190 variables
- 179 numerical variables
- 11 categorical variables
- Over 900,000 users

Delinquency

Spending

Payment

Balance

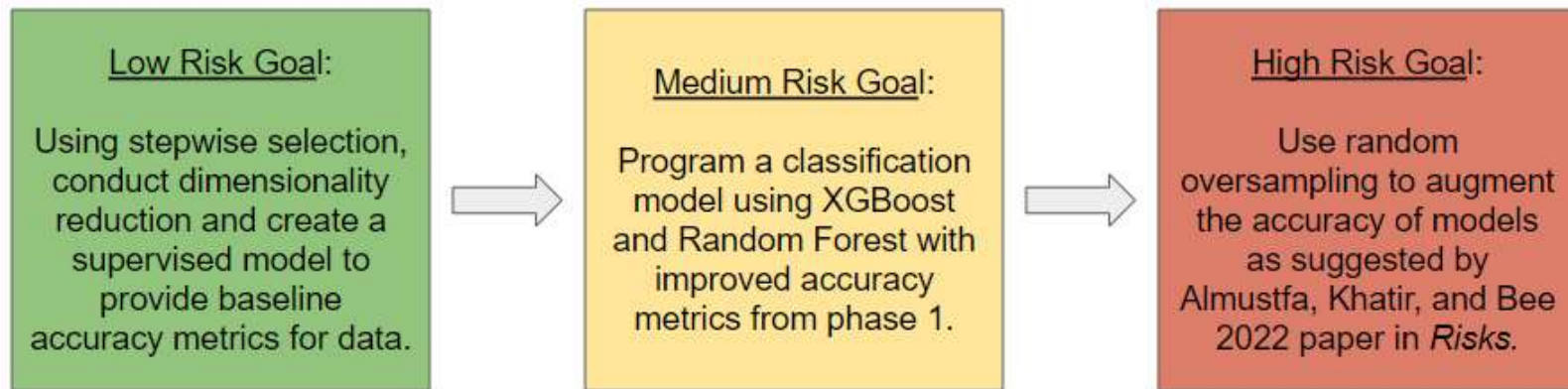
Risk





# THE APPROACH

Goal: maximize the accuracy of a classification model using XGBoost and Random Forest, with a target of 85% on the test data.



Metrics: Accuracy, Specificity, Sensitivity as calculated from Confusion Matrix:

$$\text{Acc.} = \frac{TP + TN}{n}, \quad \text{Sens.} = \frac{TP}{TP + FN}, \quad \text{Spec.} = \frac{TN}{TN + FP}.$$

# THE REFERENCES

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