



CREDIT DEFAULT PREDICTION BEST CARD

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BUSINESS PROPOSAL

- Mitigate Credit Card Default Risk
- Drive Sustainable Growth
- Leverage ML Expertise



BUSINESS OUTCOMES

- Risk Management Enhancement
- Targeted Interventions for High-Risk Customers
- Credit Policy Optimization
- Customer Retention Strategies
- Resource Allocation for Collections
- Product and Service Development
- Continuous Improvement

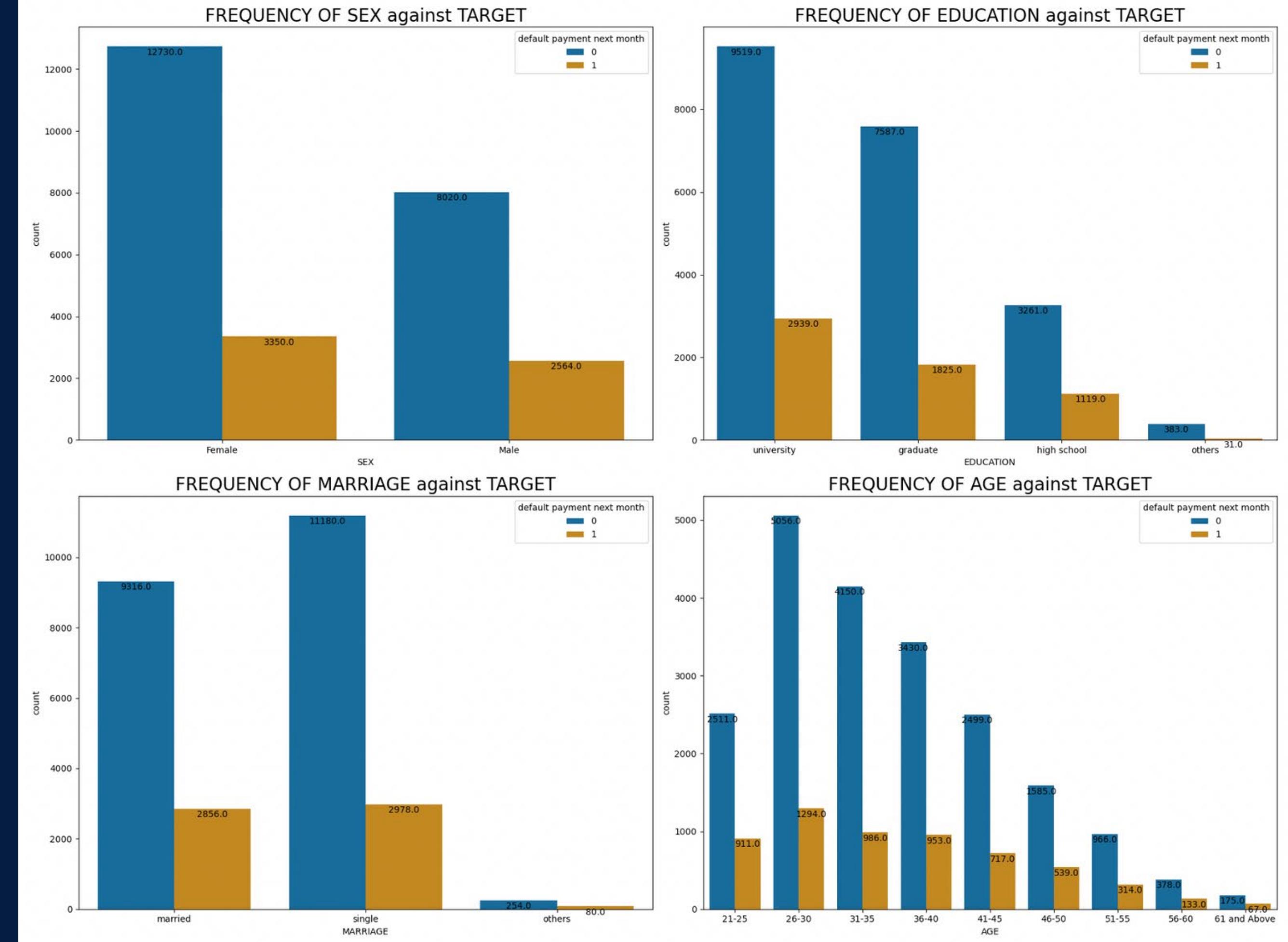


Data Exploration

- Key findings of the Dataset
 - Number of Samples : 26664
 - Number of Columns : 31
 - Classification of data types :
 - 11 Categorical, 14 Numerical
 - Age of the customers: $21 \leq \text{Age} \leq 79$
 - Number of Duplicates & Null values : 0



Distribution of Features



Data Cleaning

- Handling missing values and duplicates if any
- Dealing with outliers
- Addressing inconsistencies in data formats
- Encoding of Categorical variables :
 - SEX, EDUCATION, MARRIAGE, PAY_1, PAY_2, PAY_3, PAY_4, PAY_5, PAY_6
- Dropping of irrelevant columns : ID, EDUCATION_CAT, graduate school, high school, none, others, university



Model Building

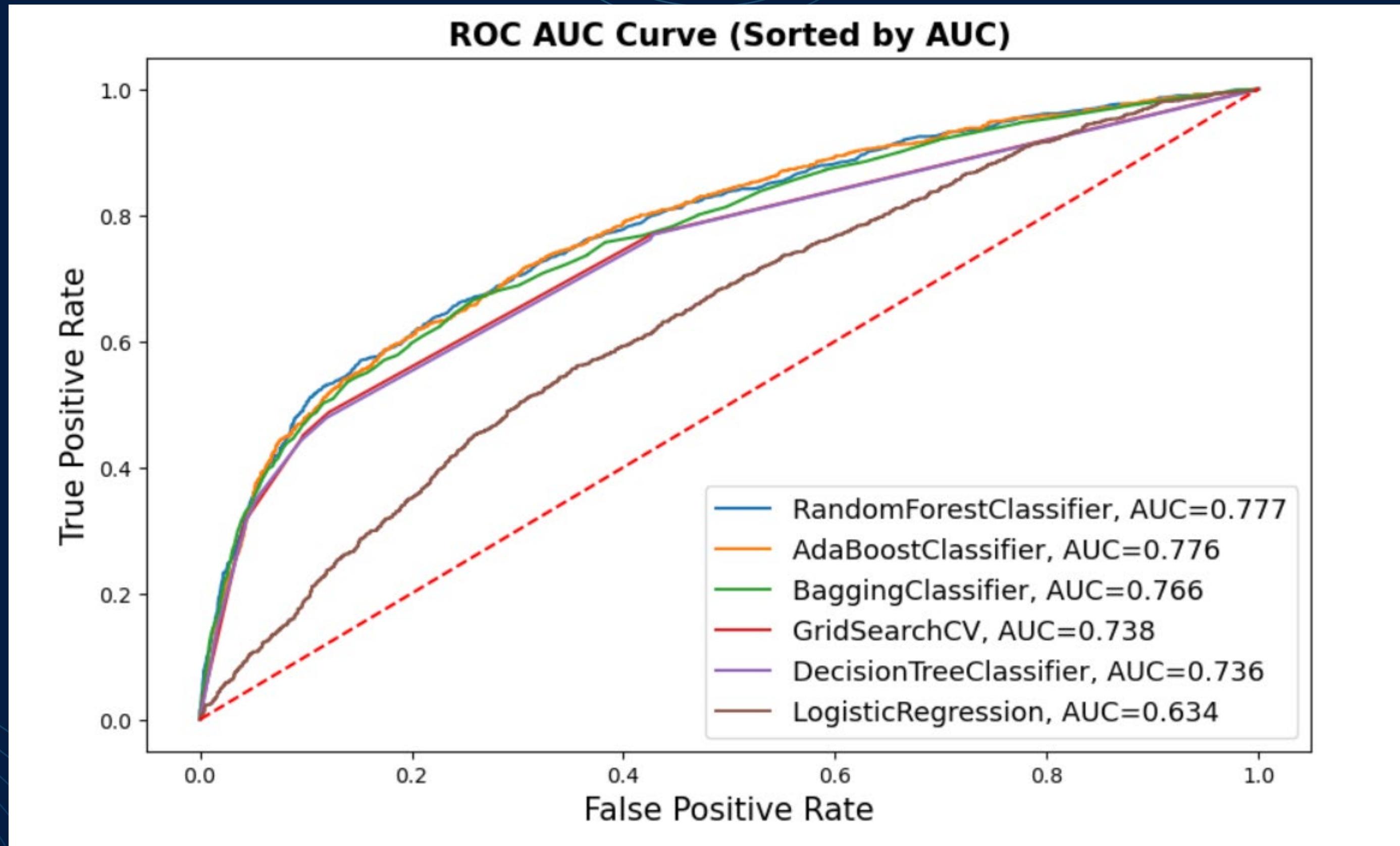
- Splitting of Train & Test Data in 80:20 ratio
- Employing of Predictive Machine Learning Algorithms
 - Decision tree
 - Logistic Regression
 - Bagging
 - Boosted model
 - Random Forest
 - Grid Search
- Model training
- Model evaluation metrics
 - Accuracy
 - AUC obtained from ROC
 - Precision & Recall



Model Comparison

Model	Accuracy	AUC
Boosted Model	81.8 %	77.6 %
Random Forest	81.7%	77.7%
Pruned Decision Tree	81.3%	73.5%
Decision Tree	72.9%	61.2%
Logistic Regression	77.8%	63.4%
Grid Search	81.5%	73.8%

Visualization of ROC Comparison



Model Deployment Strategy

- Integration Planning:
 - Define Requirements
 - Infrastructure Assessment
- Model Deployment:
 - Development of API
 - Testing
- Monitoring and Maintenance
 - Performance Monitoring
 - Feedback Loop
- Ongoing Evaluation and Updates:
 - Regular Reviews
 - Model Retraining





BUSINESS SUGGESTION

- Early Intervention Strategies
- Customized Communication
- Credit Limit Adjustments
- Financial Literacy Programs
- Integration with Customer Service



CONCLUSION

- Comprehensive analysis of credit card dataset:
 - Unveiled valuable insights into customer behavior and credit risk.
- Successful model competition:
 - AdaBooster emerged as the leading model.
 - Paves the path for innovative risk management strategies.
- Future prospects:
 - Embracing data-driven decision-making in finance.
 - Opportunities for implementing advanced risk management techniques.



THANK YOU

Let us know if you have any questions!

