# PREDICTING CREDIT CARD APPLICATIONS

Nasser Othman

# ABOUT ME

## MY BACKGROUND

- Fintech and banking background
- Fraud & AML strategies
- Data Analytics
- Light House Labs Alumni - Data scientist

## SCAN THIS QR CODE

# OPPORTUNITY

## MARKET GAP

National Business Research Institute and Narrative Science in 2020, about 32% of banks are already using AI technologies such as predictive analytics.

## CUSTOMERS

Did you know a customer can wait up to 30 days to receive a decision on their credit card application?

## COSTS

Administrative Costs
Application turnaround time

# SOLUTION

## CLOSE THE GAP

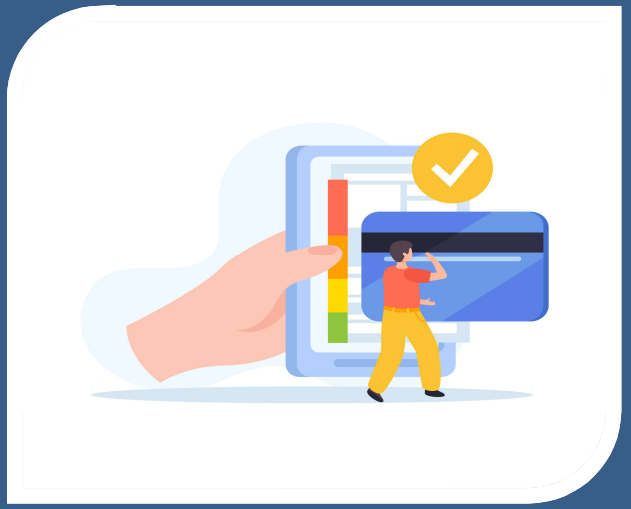
Our algorithm makes consumer lives easier, and  reduces the wait time on credit card approvals

## COST SAVINGS

Automating the decision making to reduce application turnaround time and reduce human error

## TARGET AUDIENCE

Banking and Fintech customers



# PROJECT OVERVIEW

## DATA

Credit Card Approval dataset from the UCI Machine Learning Repository.

## DATA CLEANING

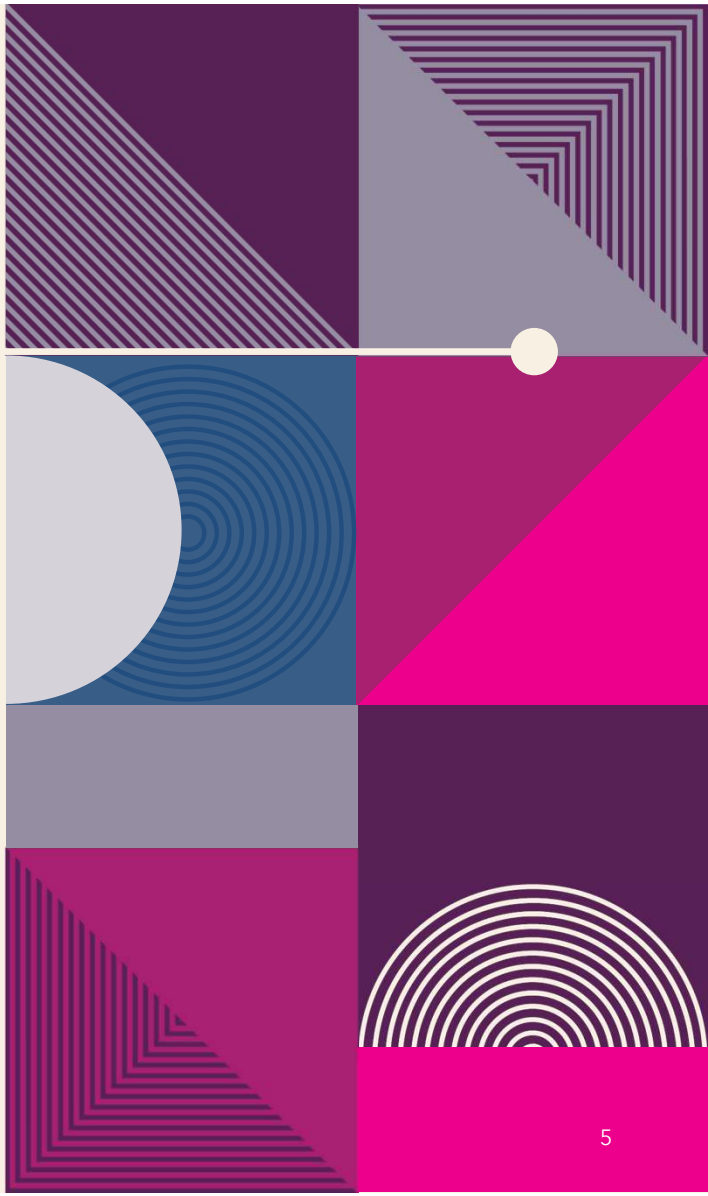
Exploratory Data Analysis (EDA)
Removing Outliers
Scaling Data
Feature engineering

## TOOLS

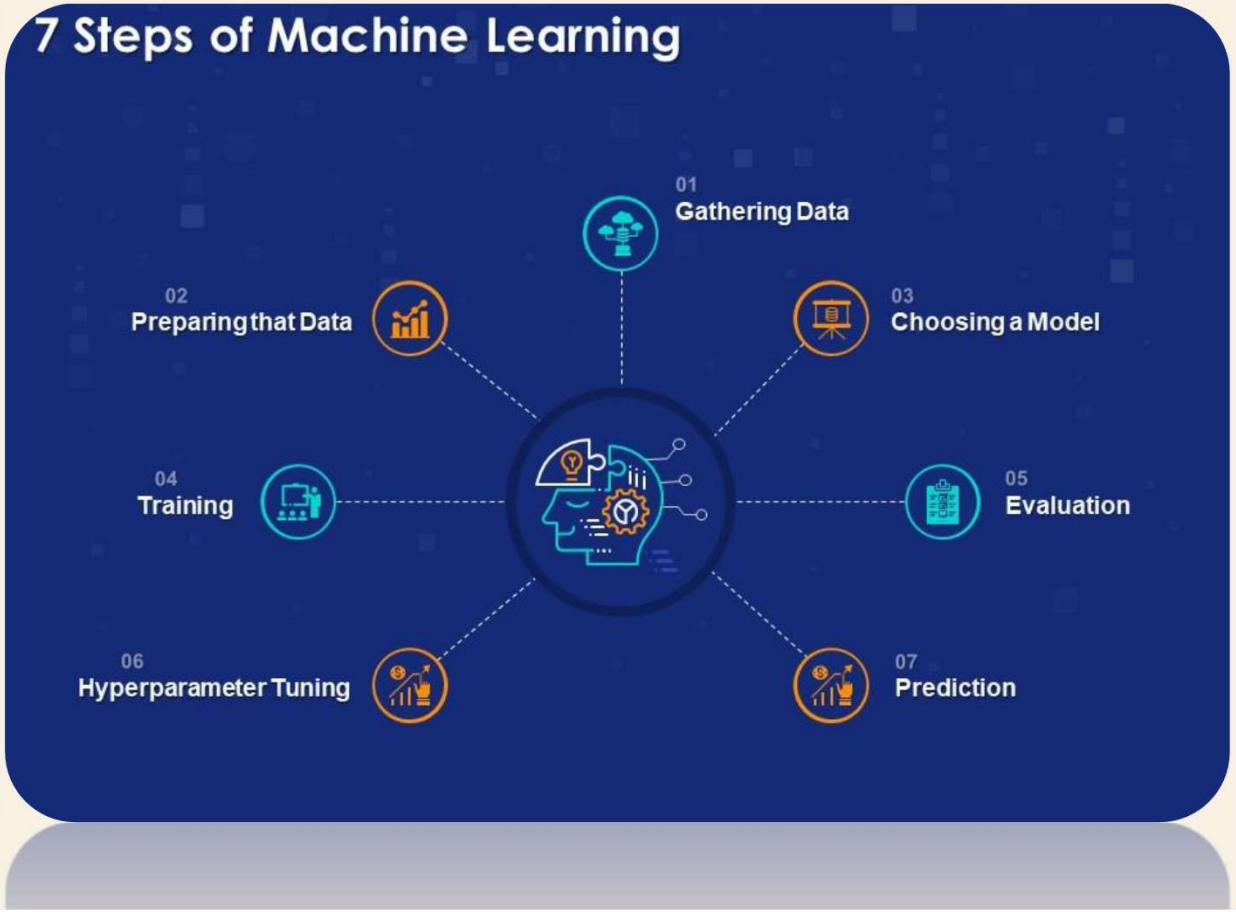
Python, Pandas, Numpy, Scikit-learn, Seaborn, Matplotlib, XGBoost and Jupyter Notebook.

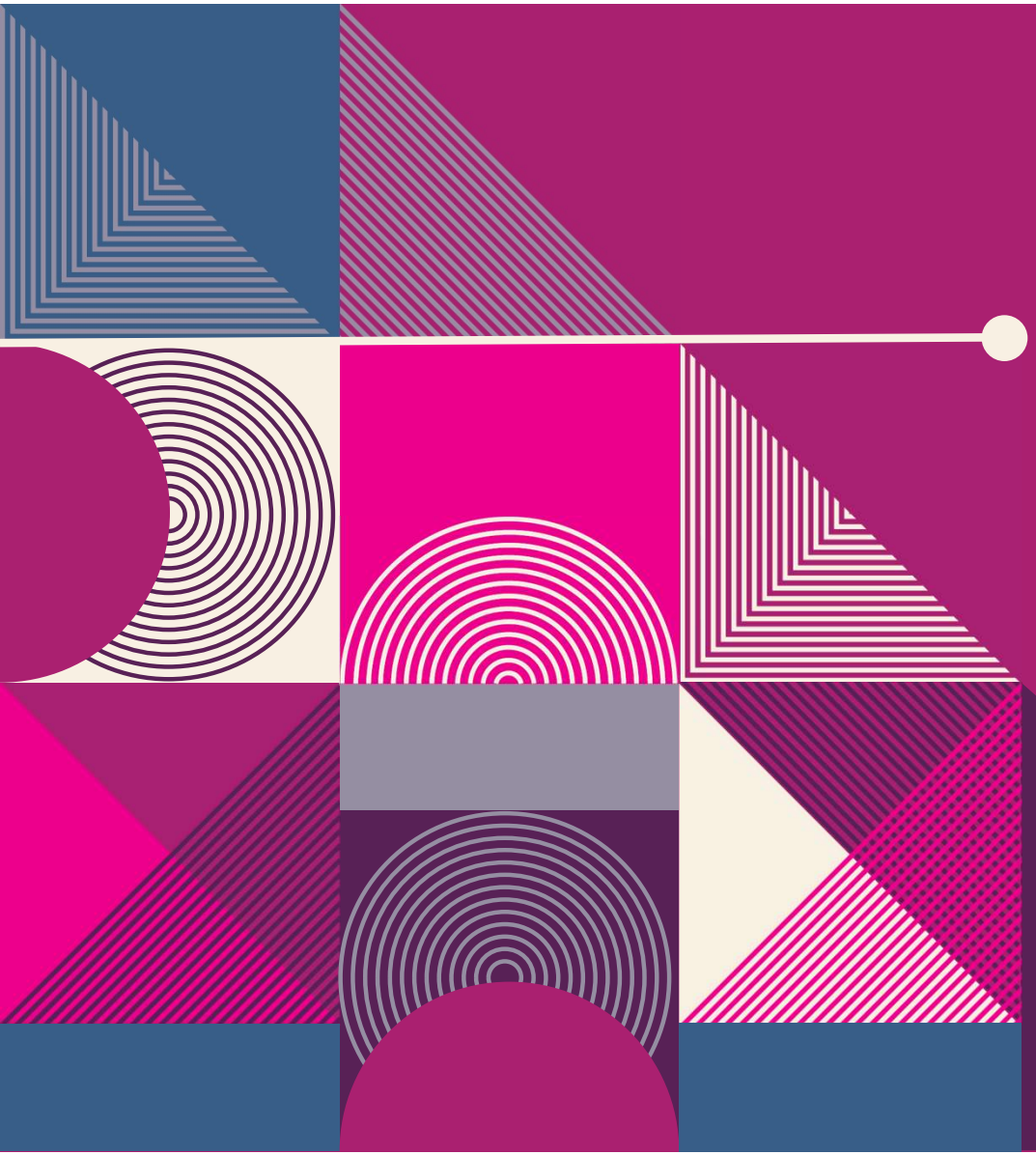
## RESULTS

Designed Machine Learning algorithms to detect credit card approvals with high accuracy!



# MACHINE LEARNING PROCESS



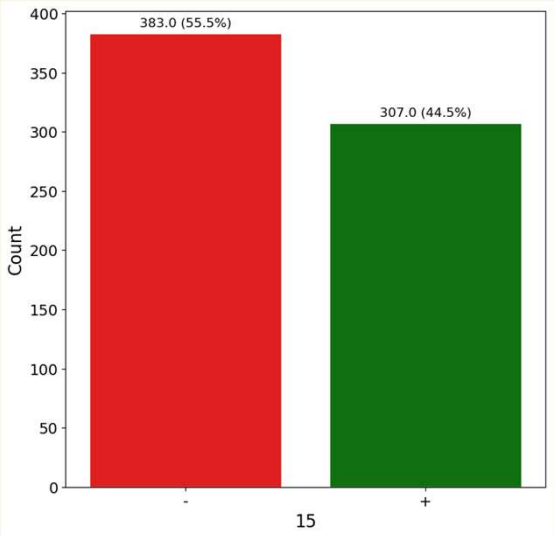


# RESULTS OVERVIEW

# OUTCOMES

## CREDIT APPROVALS/DECLINES

There were 383 declined applications and 307 approved applications.




## MODEL OUTCOMES

Out of 4 machine learning models we trained and tested, XGboost was the most accurate!

| Machine Learning Models | Train Accuracy | Test Accuracy |
|---|---|---|
| Logistic Regression – Confusion Matrix | 85% | 88% |
| Decision Tree Classifier (DTC) | 84% | 88% |
| Gradient Boosting Classifier | 98% | 87% |
| XGBoost Model | 100% | 87% |

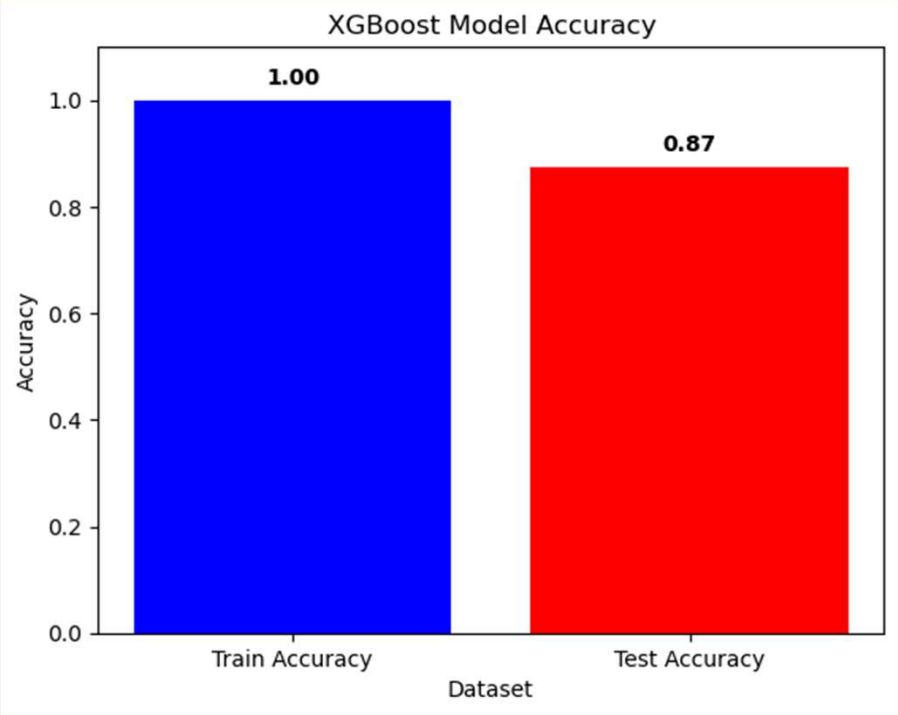
# XGBOOST MODEL

## Accuracy Breakdown

•Training Accuracy: 100%
•Test Accuracy: 87%

## Beyond The Training Data

Credit card applications turnaround time will benefit from XGBoost model




## Real World Solutions

This underscores the model's potential for practical utility and reliable performance.

# THANK YOU

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Lets connect!