

Using Data to Effectively Maximize Bank Telemarketing Campaigns

Springboard Capstone 1 Project

by

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Banking Industry Success Measurements

- Average Number of Products Held by Each Consumer
 - Higher the average better the ranking for the banks.
- Opening New Term Deposits
 - Allow banks to invest at a higher rate of return and lend collecting net interest margins.
- Increasing Profitability
 - Using funds to increase profitability through investing and loans to borrowers.

Marketing New Term Deposit Accounts

- Telemarketing
- Electronic Communications
- Advertising
- In Branch Marketing
- These methods can be hit or miss, but we could increase success rate by placing priority to those with higher probability of opening a term deposit account.

Purpose of Research

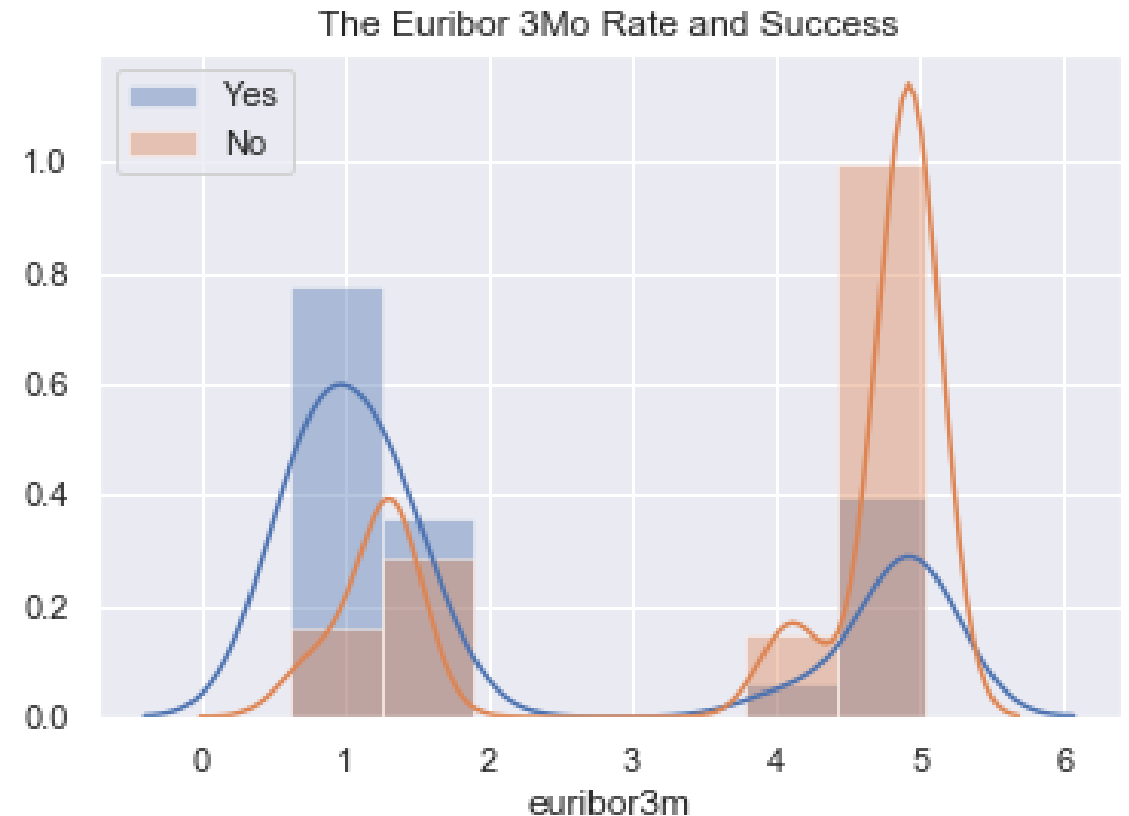
- Use data to predict which consumers have a higher probability chance of subscribing to a new term deposit.
- Allows bank to allocate resources to better optimize and maximize success rate outcome.
- Suggest further research to improve success of model predictions.

Data Markers

- Age
- Job
- Marital Status
- Education
- Previous Loan Default
- Housing Loan
- Loan
- Contact Month/Day
- Previous Marketing Outcome
- Employment Variation Rate (quarterly)
- Consumer Price Index (mo)
- Consumer Confidence Index (mo)
- Euribor (3 month rate)
- Number of Employees (quarterly)

Data Trends

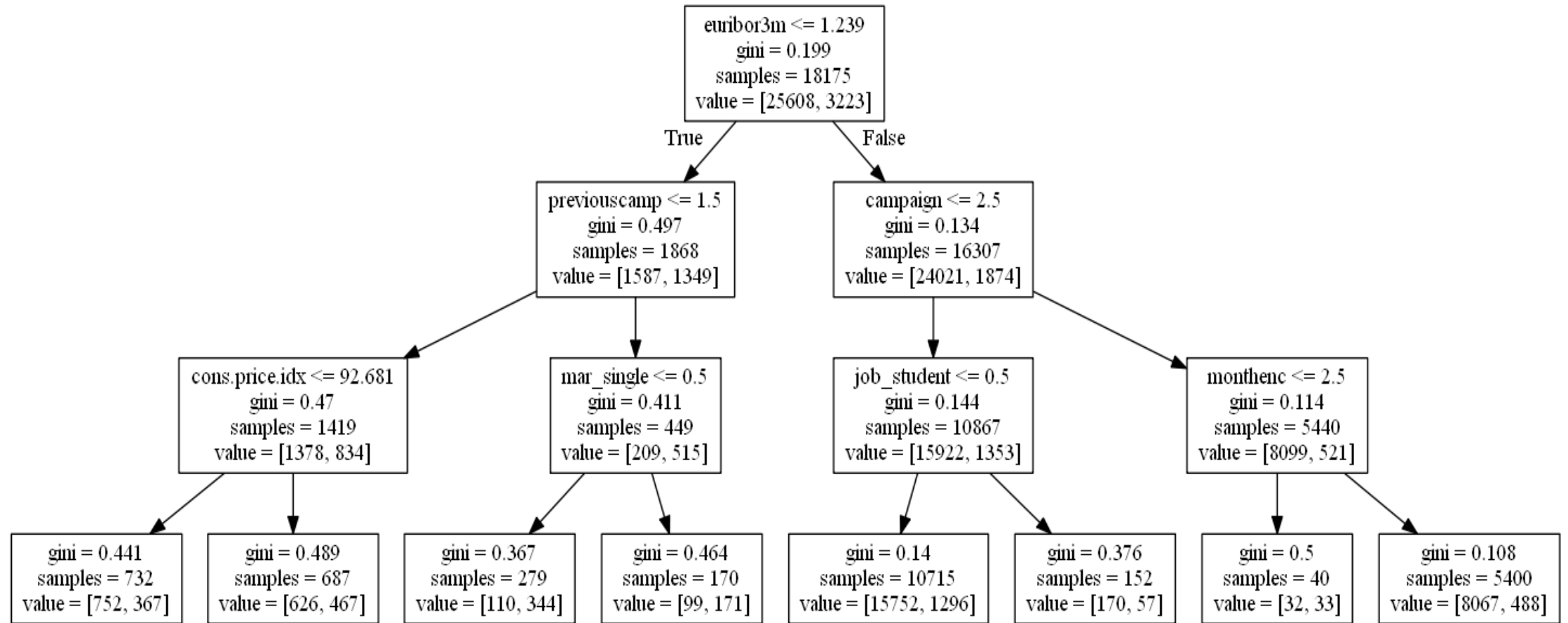
- One of the highest indicators is the rate of The Euribor. Most new subscriber term deposits were open during high Euribor rates.
- Finding the optimal interest rate while remaining profitable is important for opening new term deposits.



Machine Learning

- Random Forest Classifier
- Logistic Regression

Random Forest Classifier



Random Forest Classifier Results

- ROC, F1 etc.

Logistic Regression Model

- ROC, AUC, Model summary

Further Analysis

- Can model be improved by removing lower feature importance.

Future Research Goals

Conclusion