Data Science Internship at Data Glacier

Week 10
Project: Bank Marketing (Campaign)

Team Name: The Data-driven Dreamers

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Problem Description

ABC Bank is planning to introduce a new term deposit product for its customers, and they need to develop a model that can predict whether a customer will buy their product or not. To achieve this goal, they want to analyse the past interaction of customers with the bank or other financial institutions. The bank wants to use this model to understand the customers' behaviour and preferences regarding term deposits, and to determine which customers are most likely to buy the product. This will help the bank to focus its marketing efforts on those customers who are more likely to buy, resulting in a more efficient and effective sales process. Ultimately, the bank hopes to increase its sales and revenue through the successful launch of its new term deposit product.

The approaches we are trying to apply

to our data set to overcome problems

Although minimal data processing is required for the dataset we are handling, we have taken into account the following methods to mitigate potential issues if necessary:

- Identify relationships between variables

- Look at outliers and consider options for imputing or deleting

- Look at missing/unknown values

- Try to combine classes inside categorical columns so make the data less dense

- Log Transform/ Normalise/ Standardise numerical variables

- Remove features with very low variance (day_of_week)

- Use K-Best to see which features might be less important

Recommendations

Some recommendations for the bank marketing dataset based on the EDA:

1. Focus on the most promising customer segments: Based on the EDA, it appears that customers who are married, have higher education levels, and have higher balances in their accounts are more likely to subscribe to a term deposit. Therefore, the bank might consider focusing their marketing efforts on these segments.

2. Tailor marketing messages: Use the insights gained from the EDA to develop targeted marketing messages. For example, you might personalise messages to married customers by highlighting the benefits of saving for the future, or use language that emphasises the value of a term deposit to customers with higher education levels.

3. Optimise the timing and frequency of your campaigns: Based on the EDA, it appears that the months of March, September, October, and December have the highest number of successful term deposit subscriptions. The bank might consider increasing the frequency of their campaigns during these months and reducing the effort during other times of the year. Additionally, it might be helpful to analyse the factors that contribute to higher success rates during these months (e.g., seasonal trends, holidays, etc.) and adjust the messaging and targeting accordingly.

4. Experiment with different channels and formats: Based on the EDA, it appears that phone and cellular marketing are the most effective channels for reaching customers, while social media and email are less effective. They might consider experimenting with different formats within these channels to see which are most effective at engaging the target audience.

5. Measure and track results: Use analytics tools to measure the effectiveness of your marketing campaigns and track key metrics such as conversion rates, customer lifetime value, and ROI. This will help you to continually refine your approach and maximize your marketing success.

6. Offer incentives to encourage customers to subscribe: Based on the EDA, customers who have subscribed to a term deposit in the past are more likely to do so again. To encourage more customers to subscribe, the bank might consider offering incentives such as a higher interest rate or a cash bonus for customers who open a new term deposit account. Additionally, they might consider offering loyalty rewards to customers who maintain a term deposit account for a certain length of time, which could encourage them to continue their subscription and potentially refer others to the bank.

Github Repo link

Please visit the following link to see our project:

- https://github.com/gitkym/uvs_bank_marketing_project.git

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