DSE-315

Data Science in Practice

Final Project Report

Marketing Campaign Prediction Analysis

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Introduction:

Marketing refers to any activities that a company uses to promote its products and services and improve its market share.

The term digital marketing refers to the use of digital channels to market products and services in order to reach consumers. This type of marketing involves the use of websites, mobile devices, social media, search engines, and other similar channels. Digital marketing became popular with the advent of the internet in the 1990s.

Digital marketing involves some of the same principles as traditional marketing and is often considered a new way for companies to approach consumers and understand their behaviour. Companies often combine traditional and digital marketing techniques in their strategies.

KEY TAKEAWAYS

- Digital marketing involves marketing to consumers through any number of digital channels.
- This form of marketing is commonly executed on websites, mobile devices, and social media platforms.
- This form of marketing is different from internet marketing, which is exclusively done on websites.
- Digital marketing is a broad field, including attracting customers via email, content marketing, search platforms, social media, and more.
- One of the biggest challenges digital marketers face is how to set themselves apart in a world that is oversaturated with digital marketing ads.

Description of the dataset:

This dataset has been downloaded from Kaggle. A response model can provide a significant boost to the efficiency of a marketing campaign by increasing responses or reducing expenses. The objective is to predict who will respond to an offer for a product or service.

Interpretation of the model:

- Based on the data preprocessing part, it is pretty clear that some manipulations like data resampling and feature engineering improved the accuracy of the model prediction to a great extent.
- The correlation heatmap also offers us an insight into how the different numeric features are related to each other.
- The method of one hot encoding also improved the accuracy of the model by separating the categorical features into separate entities.
- In the predictive analysis part, we can clearly see that the RandomForestClassifier offers us the best model accuracy and also the best F1 score among all 7 models. Although some other models seem to come pretty close to it, this one remains at the top.
- The confusion matrix of the models also offers us an insight into how well the model has been predicted.

Conclusion:

This machine learning models offer us a vision of how well data predict unknown values. We analysed the data, preprocessed it, checked for its robustness via techniques like feature engineering and one hot encoding, and finally built a predictive model with good accuracy. So, this brings me to the end of my project!

By implementing an omnichannel digital marketing strategy, marketers can collect valuable insights into target audience behaviours while opening the door to new methods of customer engagement.

Benefits of digital marketing:

- You get to know your target audience.
- It doesn't cost much and is adaptable.
- You can market to anyone, anywhere.
- You can personalize by channel, measure ca paigns and set KPIs.