Title

Guiding Customers Towards Product Subscription Through App Behavior Analysis

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Summary

This project employs historical data from a fintech manufacturing company to train a machine learning (ML) classification model. The goal is to predict which users are less likely to opt for the paid membership, thereby enabling strategic and targeted marketing efforts.

Problem Statement

The objective of this project is to support fintech manufacturing companies in product development by identifying users to be targeted by the marketing team, thus ensuring efficient resource allocation.

Consider a scenario where a company introduces innovative app features. The initial crucial step is to identify potential customers. Offering a 24-hour free trial of the app can yield invaluable user behavior data for marketing. After the free version expires, users can opt for the paid version, offering enhanced features. This data was used to develop an ML classification model, which categorizes customers based on their app usage behavior. The marketing team can focus on those customers who are deemed less likely to subscribe, as those classified as likely to subscribe will probably do so without intervention. This strategy maximizes resource use efficiency by targeting a smaller group of potential subscribers who could be swayed with proper marketing.

Project Method Details

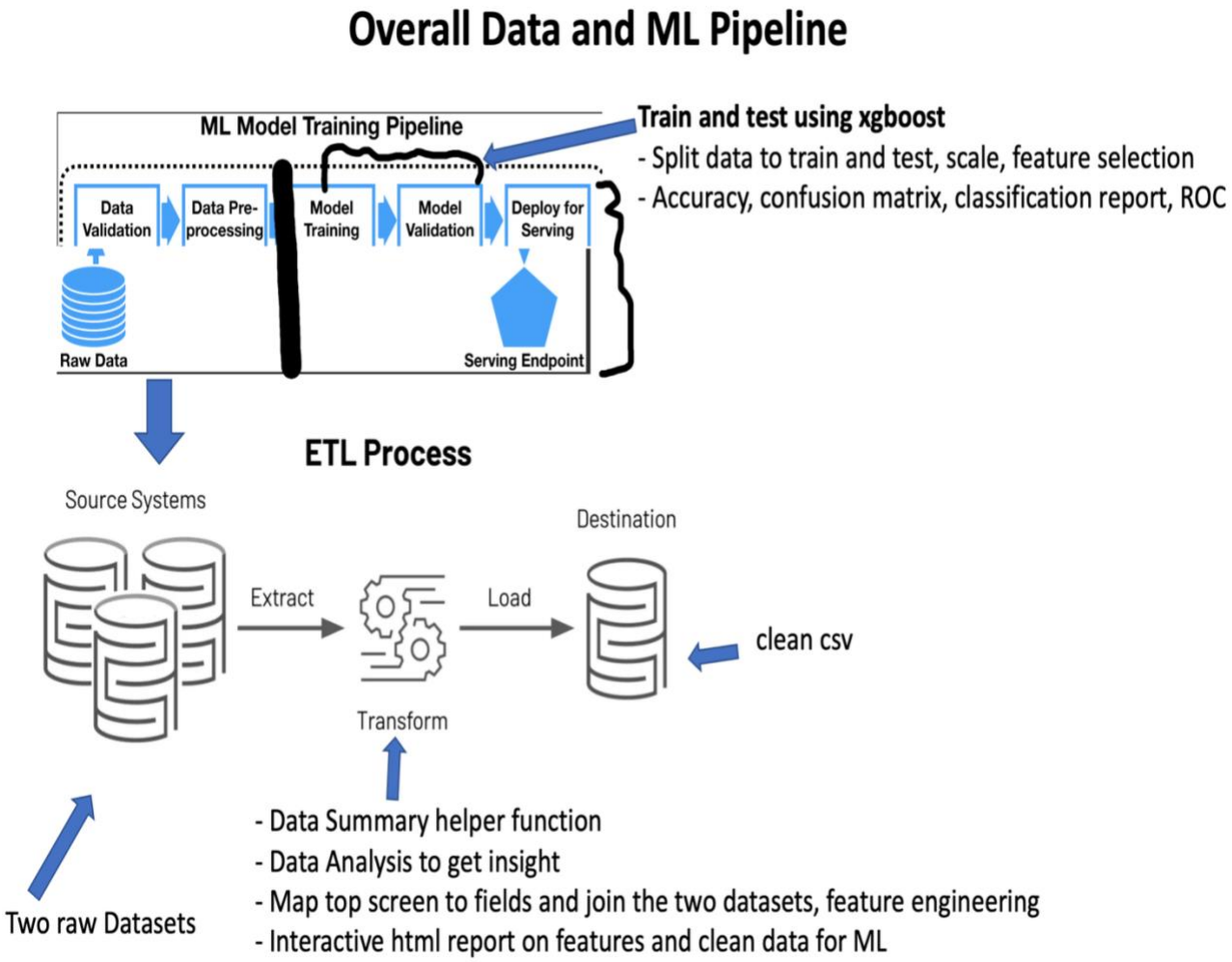
This project utilizes a Python script to perform the following tasks and visualized using diagram on the next page:

Two raw datasets, 'appdata10.csv' and 'top_screens.csv', are processed by the ETL.py Python script. This script automatically generates two files, 'new_engineeredFinal_appdata10.csv' and 'cb_EDA_output.htm'. The 'new_engineeredFinal_appdata10.csv' is a clean, combined file derived from the 'appdata10.csv' and 'top_screens.csv' datasets, which was used to develop the 'customer_behavior_predictor.pkl' ML model. 'cb_EDA_output.htm' is an interactive report produced from the clean data, serving as a useful resource for the marketing team to understand how each feature interacts with the target feature. The 'final_predictionXB_forMarketingTeam.csv' file, created by the 'customer_behavior_predictor.pkl' ML model, includes user IDs and predictions, which the marketing team can use to reach out to customers less likely to subscribe. The 'main.py' and

'customer_behavior.py' files were used to locally deploy the model. Upon receiving new data, the model will automatically provide predictions.

Folders and Their Contents

"datasets_and_report" – contains all datasets and reports.
"script" – contains all Python scripts.
"model" – houses the developed ML model.



Deliverables

The project is hosted on the following GitHub page:

https://github.com/Adaamaa/User-Behavior-Analysis-Capstone-Project.git