Advanced Real Estate Analytics for Retail

Determining Express Locations

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BUSINESS PROBLEM

Retail Client faces the challenge of expanding its retail footprint in a highly competitive landscape.

Identifying optimal locations for new stores is critical to ensure success of Supercenter and Express stores.

The goal is to pinpoint potential locations that promise high foot traffic and revenue for Express outlets.

Expand Retail Client Store Footprint: Retail Client Express

Collect Real Estate Data

Retail Client + Competitors

Analyze

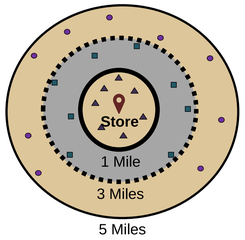
Evaluate Location Performance

ANALYTICS PROBLEM

The project aims to transform raw location-based data into actionable insights by analyzing Store level data (Geospatial + Customer Centric).

Create a model that evaluates the success of any location in terms of customer visits. Make data-driven decisions for opening new Express stores, maximizing market penetration.

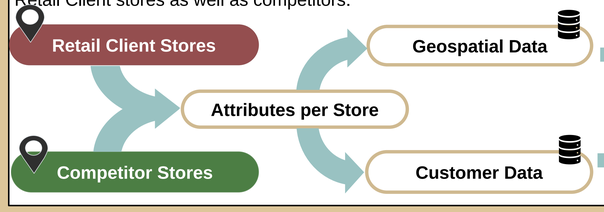
Divide data into 3 segments based on radial distance around the store location. Relevant features are applied in each.

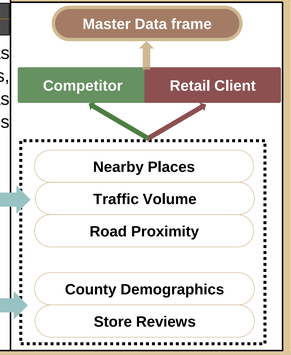


Attribute Radius
Understanding distribution of features across segments.

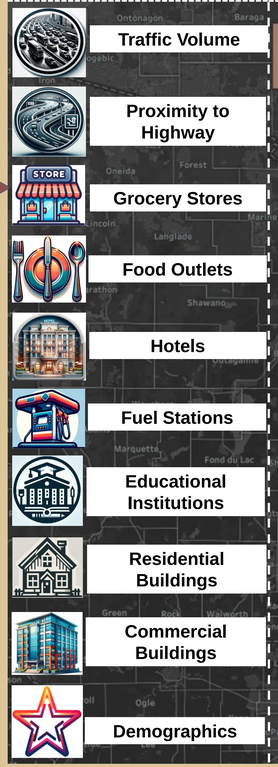
DATA

Dataset is crafted by web-scraping, encompassing key factors, such as traffic volume, proximity to highway, and nearby places (grocery stores, restaurants, medical facilities). It also includes social indicators such as demographic information of the surrounding area. This dataset includes Retail Client stores as well as competitors.

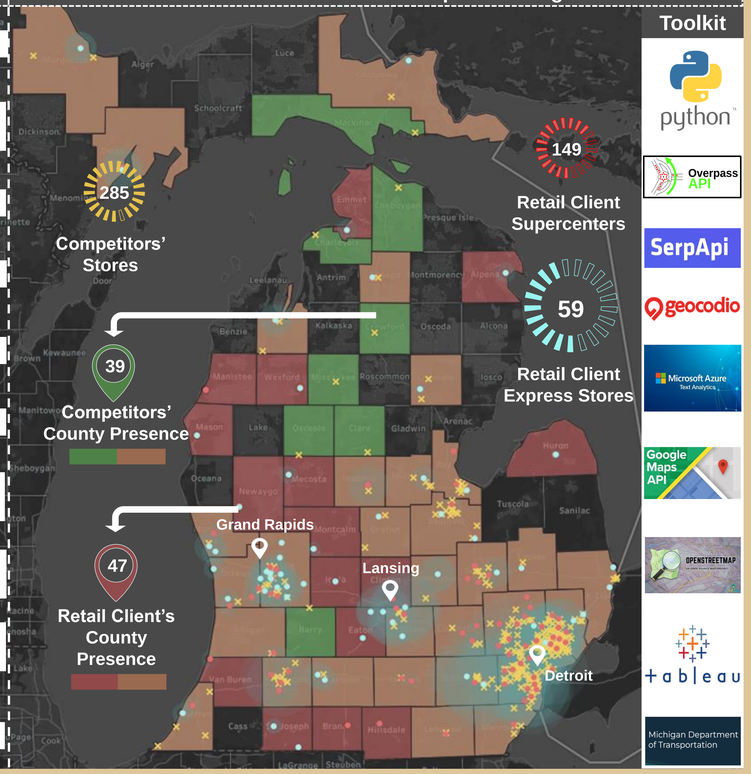




Attribute Importance



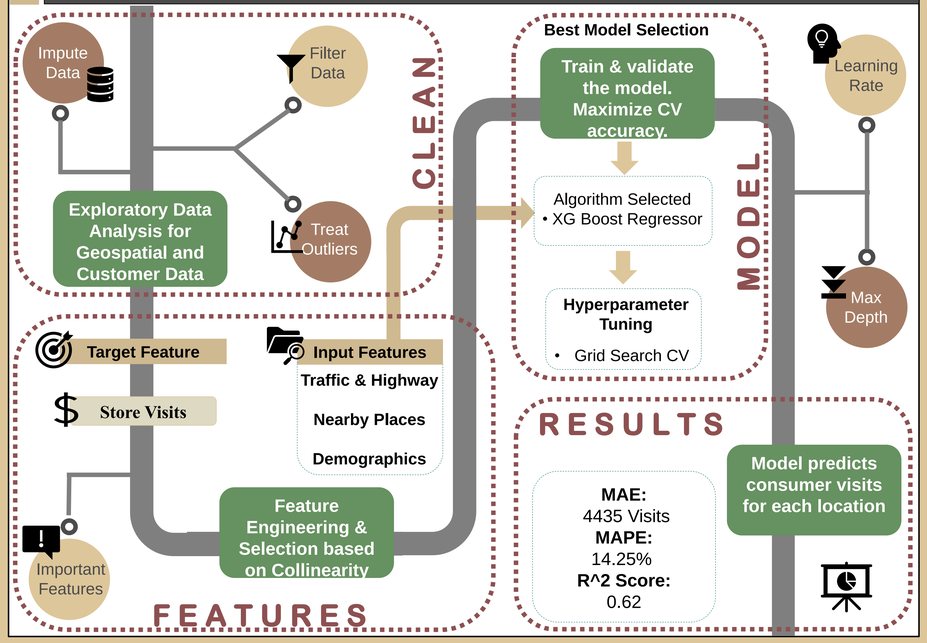
Convenience Store Landscape in Michigan



Toolkit: python, Overpass API, SerpApi, geocodio, Microsoft Azure Text Analytics, Google Maps API, OPENSTREETMAP, tableau, Michigan Department of Transportation

Map of Michigan highlights Retail Client and Competitor stores across all counties to understand the potential for geographic expansion.

MODEL BUILDING



METHODOLOGY

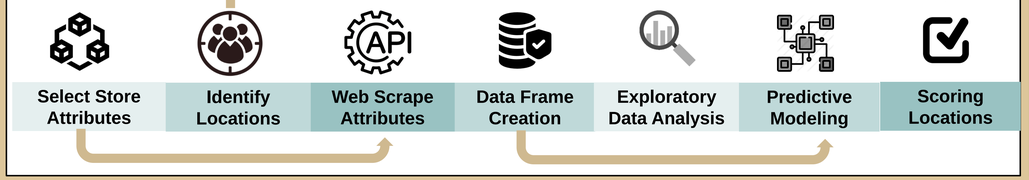
The project begins with data collection through web scraping with APIs.

Data preprocessing is then performed to clean and structure the dataset.

EDA is conducted to identify trends, patterns, & correlations.

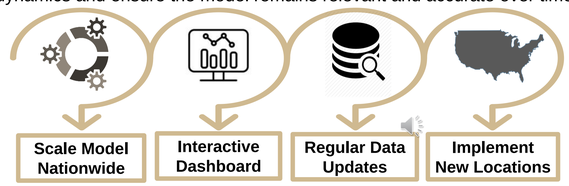
Predictive analytics employed to forecast store visits based on the identified factors.

Deploy model through a Tableau dashboard with real-time updates.



DEPLOYMENT & LIFE CYCLE MANAGEMENT

The final model is deployed in a user-friendly dashboard accessible to Retail Client's strategic planning team. This dashboard allows for the input of geographic coordinates, outputting a location score along with detailed statistics & factors influencing the score. The project includes a framework for regular model updates and data refreshes to adapt to changing market dynamics and ensure the model remains relevant and accurate over time.



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