



Finding a New Pet Store Location in St. Paul, MN

IBM Applied Data Science - Coursera Capstone

Trunojoyo Anggara
September 2019



Introduction / Business Problem

- Estimates of more than \$75 billion are going to be spent for pets in the US this year
- More than 40% of it is being spent on food:
 - Pet store is a lucrative business
- Target Audience: John Doe wants to open a new pet store in St. Paul, MN area
- Can we use our machine learning skills to solve this problem?



Data

- Zip code data from [uszipcode](#) Python package
- Nominatim data for latitude and longitude of St. Paul, MN
- Venues data from:
 - FourSquare data from [FourSquare Places API](#)
 - Yelp data from [Yelp Fusion API](#)

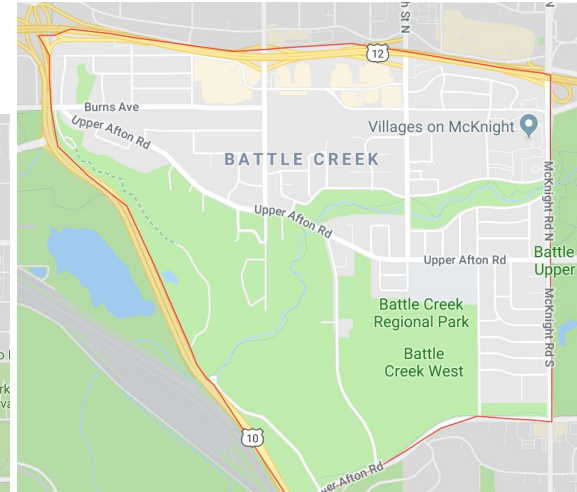


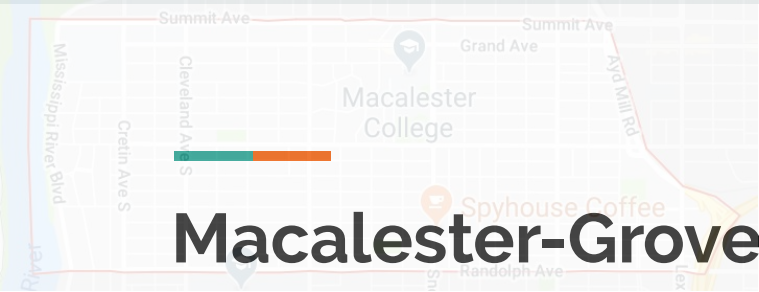
Methodology

- Combining the dataset from FourSquare and Yelp API
- Reshaping the data for the k-Nearest-Neighbor algorithm
- Determine the k value for the algorithm
- Run the algorithm and visualize it on the map using Folium

Discussions

- Three zip codes are nominated for the new pet store locations:
 - Macalester-Groveland neighborhood (55105)
 - Falcon Heights area (55108)
 - Battle Creek neighborhood (55119)





Macalester-Groveland neighborhood

- Pros: they have a lot of pet services, high median income area (\$74k):

Dog Days Daycare & Boarding - Grand Ave

Animal Medical Clinic

Grand Avenue Veterinary Center

Grand Groomers

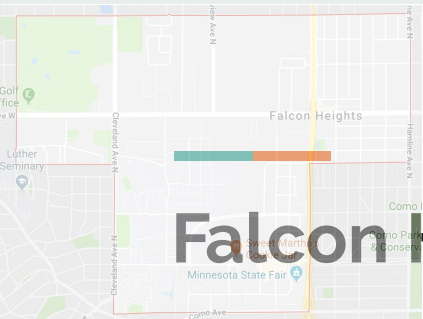
Bubbly Paws

Cons: they have two grocery stores nearby:

Kowalski's Market

Trader Joe's

- Recommendation: the best location to open a new pet store, make sure items are different enough from the ones sold in the two grocery stores



Falcon Heights area

- Pros: two veterinary services and one animal shelter without any pet store in sight

Raptor Center

Animal Humane Society - St. Paul

University of Minnesota Veterinary Medical Center

Cons: not as high of a median income (\$57k) as the Macalester neighborhood (\$76k)

- Recommendation: a very promising location to open a new pet store



Battle Creek Neighborhood

- Pros: plenty of pet services without any pet store in sight

Scenic Hills Animal Hospital

Funtastic K9 Training

Century Animal Clinic

Battle Creek Dog Park

Cons: not as high of a median income (\$56k) as the Macalester neighborhood (\$76k)

- Recommendation: a very promising location to open a new pet store



Conclusion

- Based on the k-Nearest-Neighbor algorithm, the three most promising location for opening a new pet store are:
 - [Macalester-Groveland neighborhood](#)
Ensure items are different enough from the other stores
 - [Falcon Heights](#)
A very promising location due to no pet stores in sight
 - [Battle Creek neighborhood](#)
A very promising location due to no pet stores in sight