

IDEAL LOCATIONS FOR NEW RESTAURANTS IN DENVER

IBM CAPSTONE PROJECT
YAHUI ZHU



BACKGROUND

- Denver has been one of the fastest-growing major cities in the United States
- Denver is also a jumping-off point for ski resorts in the nearby Rocky Mountains
- Opening a new restaurant in Denver is promising and profitable considering the local population and tourists

BUSINESS PROBLEM

- Find an ideal place to open a new restaurant in Denver
- Identify the best type of restaurant to open in different neighborhoods

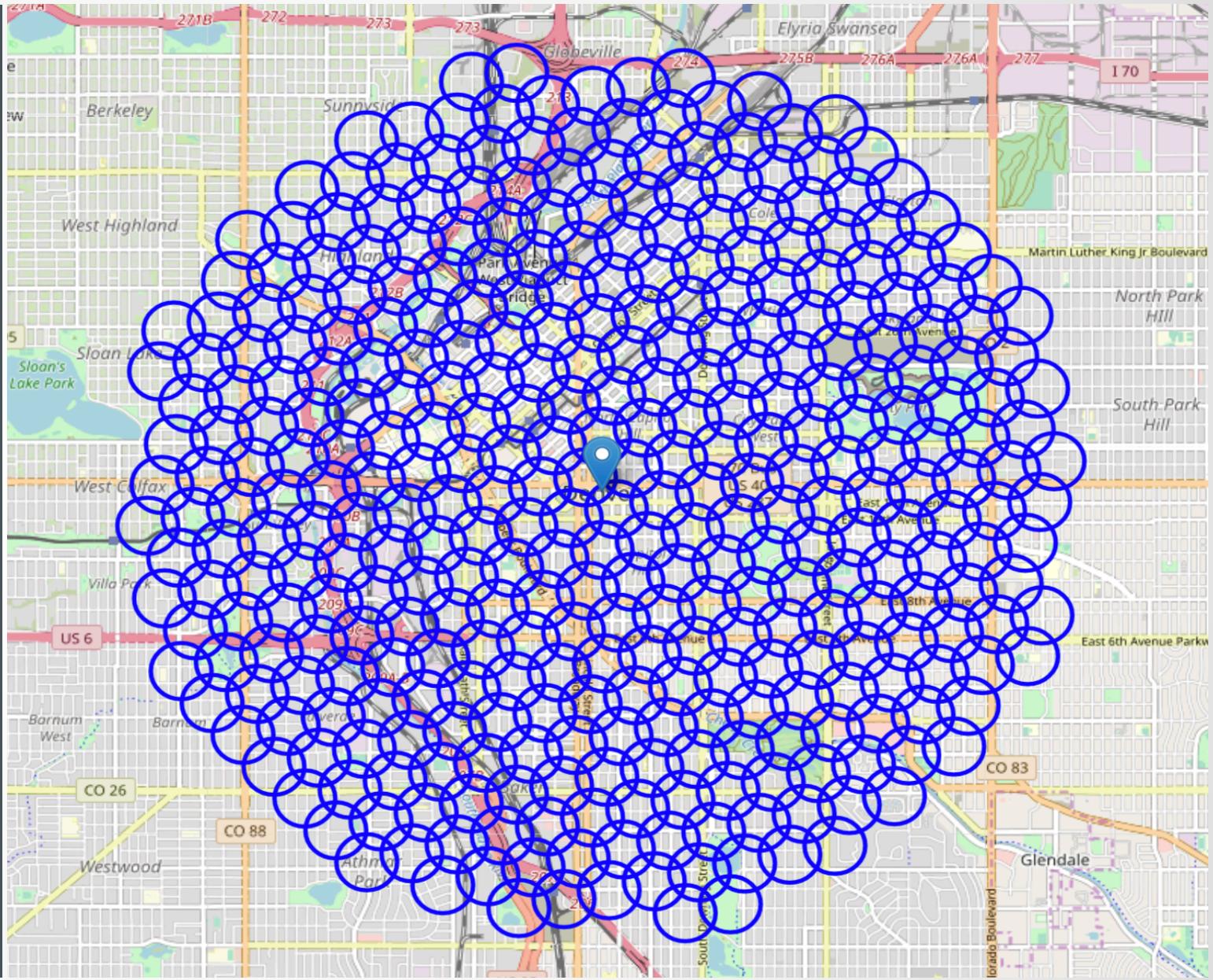
METHODOLOGY

- Clustering Denver neighborhoods in order to recommend places to open a restaurant and the type of restaurant in different neighborhoods
- Key factors to consider:
 - number of existing restaurants in the neighborhood
 - number of distance to other restaurants in the neighborhood
 - distance of neighborhood from city center

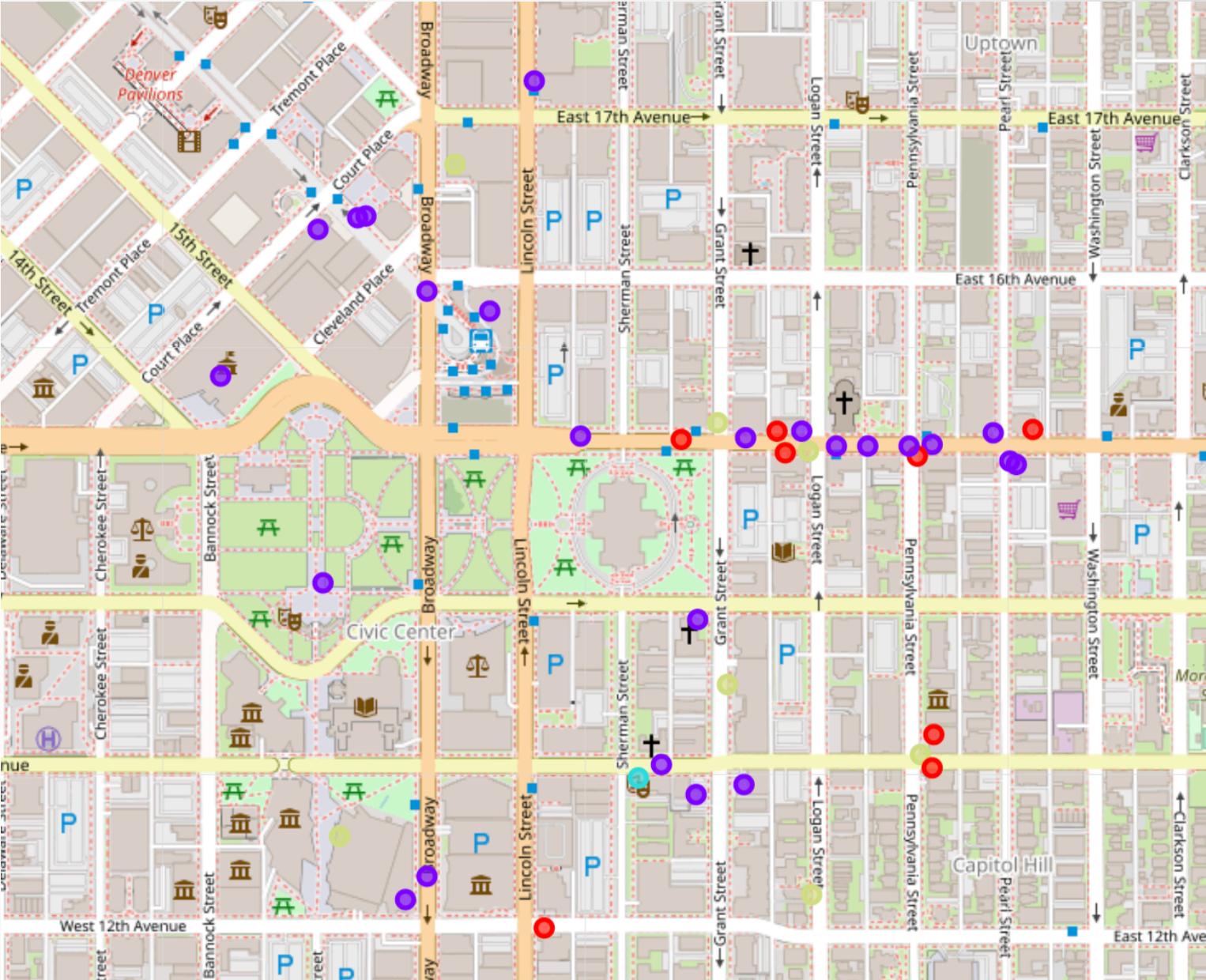
DATA SOURCE

- Google Maps API reverse geocoding: obtain approximate addresses of centers of candidate areas
- Foursquare API: obtain detailed information of restaurants in every neighborhoods

RESULTS - GRID OF LOCATIONS



RESULTS - CLUSTERING



RESULTS

- Cluster 1: Bars and Cafes, good quality food
- Cluster 2: Café and India Restaurants, below average quality food
- Cluster 3: Vegetarian Restaurants, high quality food
- Cluster 4: Mixed Restaurants, moderate quality food

CONCLUSION

- We found four promising restaurant clusters with different food type concentration
- Final decision on restaurants should also consider attractiveness of locations, levels of noise/proximity to major roads, distance to resorts, etc.