Chicago Restaurant Recommender System

Applied Data Science Capstone

PROBLEM

- While browsing for restaurants on Foursquare users can be overwhelmed by choice.
- Other users may be reluctant to try new eating establishments.
- User dissatisfaction could drive them to other sites with a better user experience.

SOLUTION

- We want to provide useful suggestions for new restaurants to better server our customers.
- We have built a content-based recommender system to suggest new restaurants to users.

Data Collection

This data will be used to build recommendations for each user

Chicago Neighborhoods

Users often prefer establishments in familiar neighborhoods.

Foursquare Venues

We have gathered venues from Foursquare in each neighborhood.

Foursquare Users

Based on the venues we were able to find users that liked each.

Missing Date

Foursquare limits access to users' dislikes and number of visits.

Machine Learning

One-Hot Encoding

Venue Categories

Each venue on Foursquare includes a category. We converted these categories into numerical features to better compare venues.

Neighborhoods

With 77 neighborhoods Chicago can be difficult to traverse. To build better recommendations we also applied one-hot encoding to our neighborhood data.

Combined Data

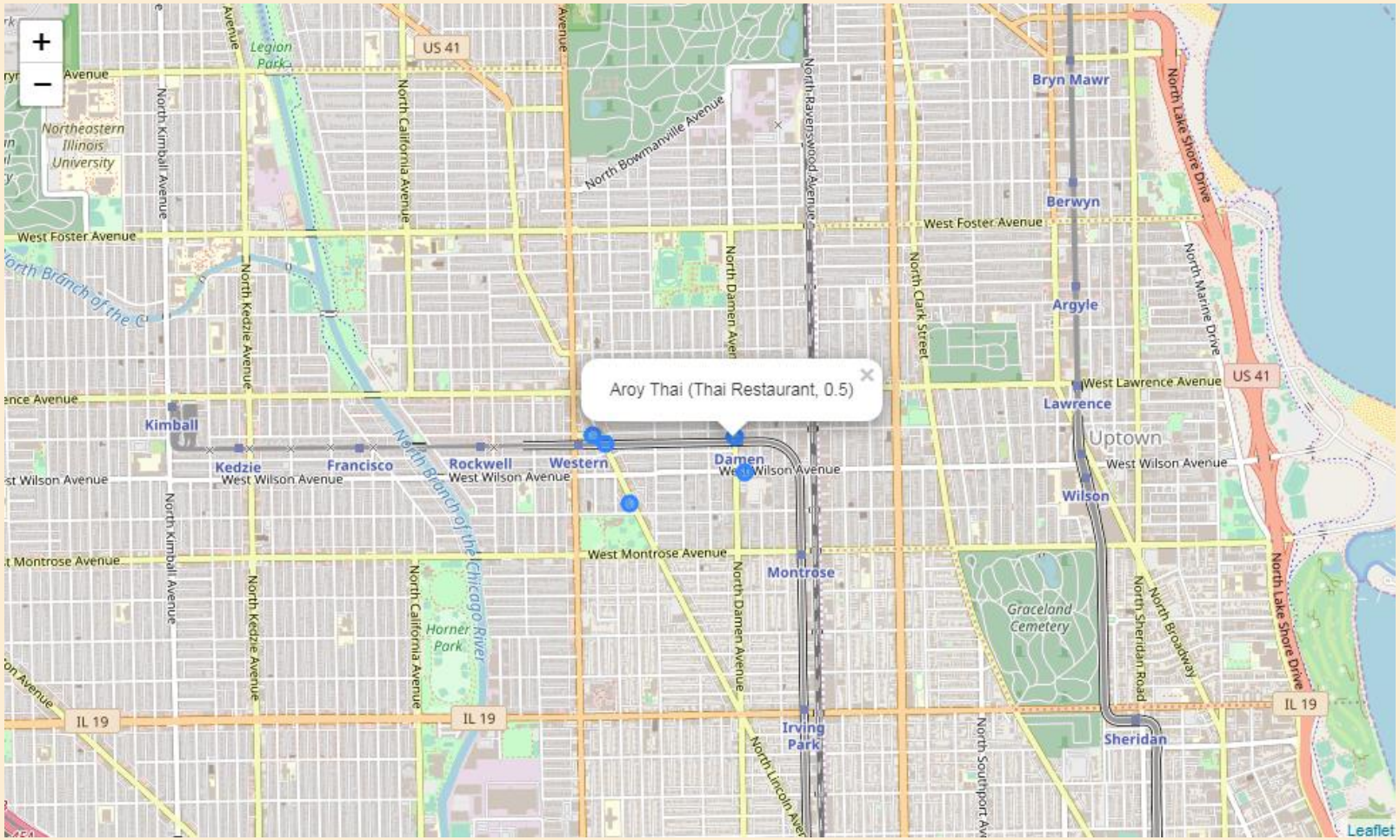
The categorical data for the venues and neighborhoods was then combined to build a richer dataset from which we could build our recommendations.

User Recommendations

By using a sample user's previous ratings we were able to create a weighted list of recommendations

	Neighborhood	Venue	Venue Latitude	Venue Longitude	Venue Category	Rating
40	Lincoln Square	Bistro Campagne	41.963663	-87.685472	French Restaurant	0.5
58	Lincoln Square	Rosded Thai Cuisine	41.966728	-87.687698	Thai Restaurant	0.5
104	Lincoln Square	Aroy Thai	41.966642	-87.679138	Thai Restaurant	0.5
978	Lincoln Square	La Boulangerie	41.965011	-87.678553	Bakery	0.5
1121	Lincoln Square	Baker Miller	41.966328	-87.686981	Bakery	0.5

Mapping Our Results



CONCLUSION

- The exercise was successful in delivering valuable recommendations for users.
- Limitations on the available data may have reduced the depth of the model.
- We were able to show the value in providing relevant suggestions to users.