Exploring the Food Vibe of LA Neighborhoods

Eyan Yeung

Coursera Applied Data Science Capstone

3/11/2020

Distribution of cuisines in LA neighborhoods is useful information to foodies and restaurateurs

- Los Angeles is well known for having diverse types of food.

- Different cuisine concentrates in different neighborhoods

- Foodies are interested in knowing which neighborhood to go to for which kind of cuisine

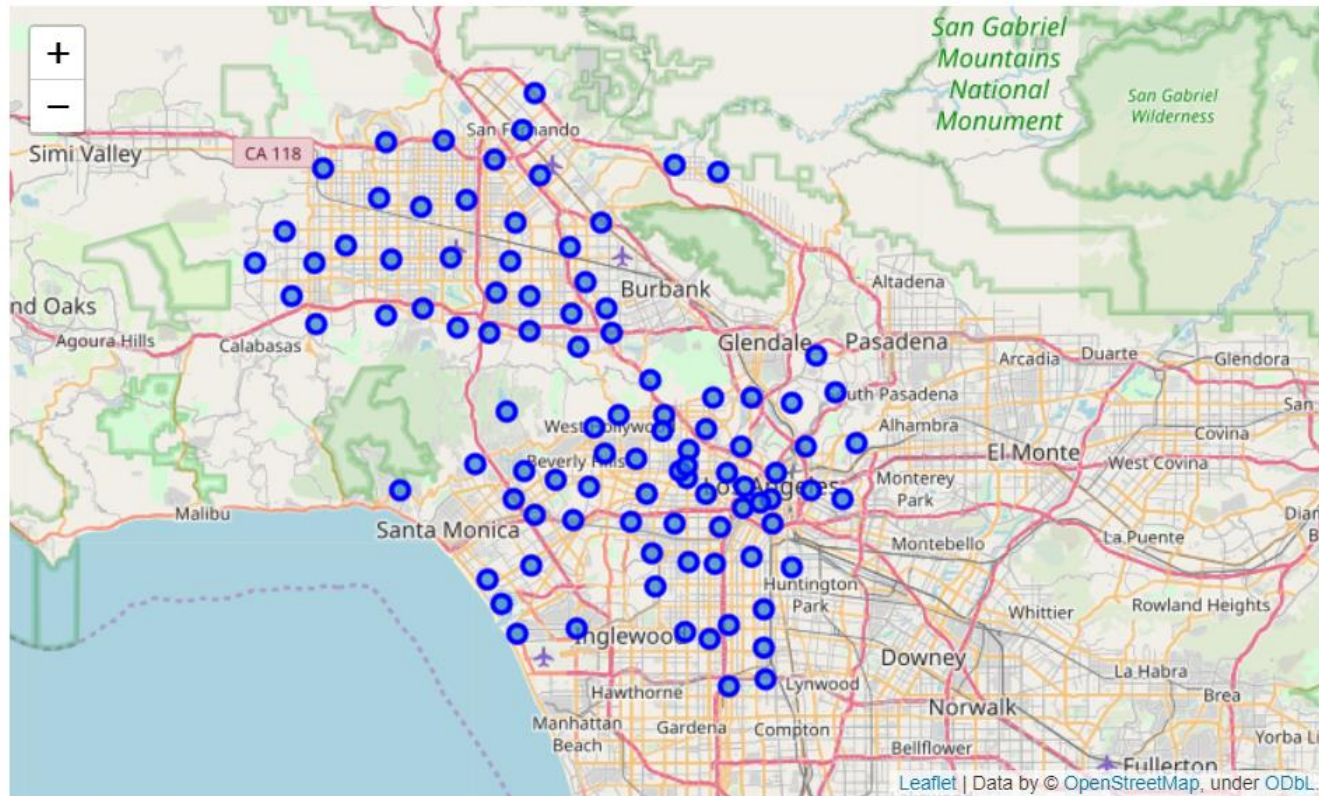- Restaurateurs need to know the food vibe of the neighborhood before opening in a new neighborhood

Data Acquisition and Cleaning

▶ Zip code, neighborhood name in LA county from [LA almanac](#).

▶ The longitude and latitude of all areas in California from [OpenDataSoft](#).

▶ Combing the zip code, neighborhood name, city, longitude and latitude information from the two datasets for neighborhoods in the Los Angeles area.

▶ Longitude, latitude and neighborhood name were used as input for the FourSquare API to obtain the top 100 food venues in that neighborhood

	Zip Code	Neighborhood	City	Latitude	Longitude
0	90001	South Los Angeles	Los Angeles	33.972914	-118.24878
1	90002	Southeast Los Angeles, Watts	Los Angeles	33.948315	-118.24845
2	90003	South Los Angeles, Southeast Los Angeles	Los Angeles	33.962714	-118.27600
3	90004	Hancock Park, Rampart Village, Virgil Village,...	Los Angeles	34.077110	-118.30755
4	90005	Hancock Park, Koreatown, Wilshire Center, Wils...	Los Angeles	34.058911	-118.30848

Snapshot of the initial dataset used as inputted into the FourSquare API. There are 97 rows (neighborhoods) and 5 columns.

Map showing the geographical distribution of the neighborhoods

Top neighborhood for different cuisines

▶ The percentage of each cuisine in each neighborhood is calculated

▶ Sawtelle : known for Japanese food

▶ Reseda: the home of a small Vietnamese community

```
----Reseda----
                            venue  freq
0           Vietnamese Restaurant  0.33
1                 Thai Restaurant  0.11
2              Chinese Restaurant  0.11
3              Seafood Restaurant  0.11
4       Middle Eastern Restaurant  0.11


----Sawtelle, West Los Angeles----
                            venue  freq
0             Japanese Restaurant  0.39
1       Middle Eastern Restaurant  0.13
2              Chinese Restaurant  0.09
3              Mexican Restaurant  0.09
4             American Restaurant  0.04
```
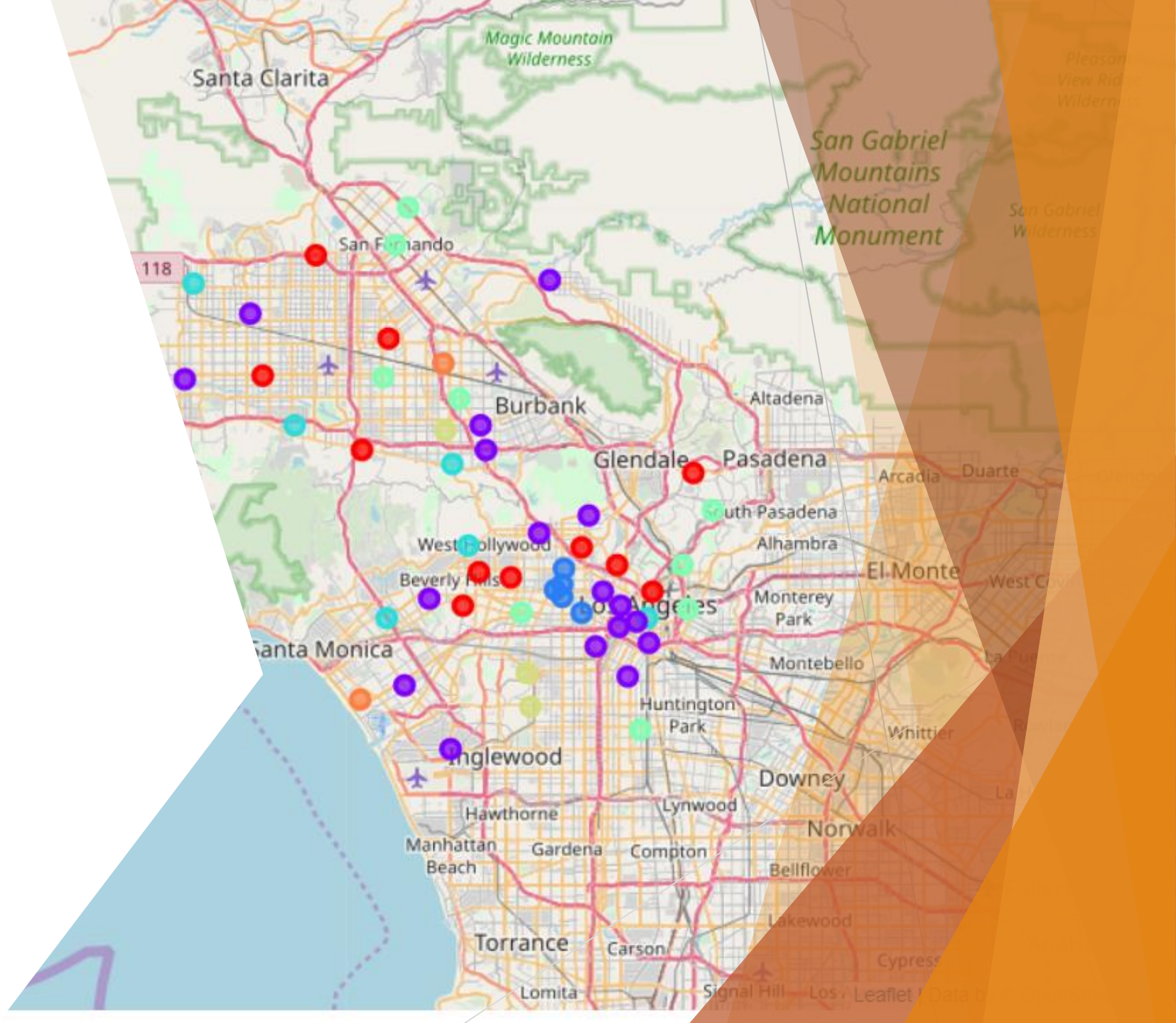
Top 5 cuisines for two of the LA neighborhoods

Top neighborhood for different cuisines

▶ The categories (cuisine) of the food venues were combined into 29 general categories.

▶ Venice is highly dominated by food trucks.

▶ Reseda has the highest percentage of Vietnamese food out of all the neighborhoods analzyed

	highest percentage in neighborhood	best neighborhood
American Restaurant	54.5	Hyde Park, View Park, Windsor Hills
Asian Restaurant	28.6	Panorama City
BBQ Joint	33.3	Granada Hills
Bakery	50.0	Granada Hills
Breakfast Spot	10.0	Lake View Terrace, Sylmar
Café	33.3	Fairfax, Melrose, Miracle Mile, Park La Brea, ...
Chinese Restaurant	33.3	Downtown Civic Center, Chinatown, Arts Distric...
Diner	14.3	Southeast Los Angeles
Filipino Restaurant	42.9	Panorama City
Food Court	11.1	Downtown Fashion District, Downtown Southeast
Food Truck	64.5	Venice
French Restaurant	9.5	Eagle Rock
Hawaiian Restaurant	11.1	Downtown Fashion District, Downtown Southeast
Indian Restaurant	10.0	Baldwin Hills, Crenshaw, Leimert Park
Italian Restaurant	14.3	Eagle Rock
Japanese Restaurant	41.5	Downtown Central, Downtown Fashion District
Korean Restaurant	56.5	Hancock Park, Wilshire Center, Windsor Square
Kosher Restaurant	15.6	West Fairfax
Latin American Restaurant	22.2	Byzantine-Latino Quarter, Harvard Heights, Kor...
Mediterranean Restaurant	14.3	Shadow Hills, Sunland
Mexican Restaurant	60.0	Lincoln Heights, Montecito Heights
Middle Eastern Restaurant	16.7	Granada Hills
Seafood Restaurant	18.2	Hyde Park, View Park, Windsor Hills
Spanish Restaurant	11.1	Byzantine-Latino Quarter, Harvard Heights, Kor...
Steakhouse	9.7	Downtown Bunker Hill, City West, South Park-North
Thai Restaurant	18.8	North Hollywood, Studio City, Toluca Lake, Wes...
Vegetarian / Vegan Restaurant	12.5	North Hollywood, Studio City, Toluca Lake, Wes...
Vietnamese Restaurant	33.3	Reseda
pub	6.7	Southeast Los Angeles, Univerity Park

7 clusters with different food vibes from K-mean clustering

- ▶ Each cluster has high percentage of different food:
  - ▶ Blue: Korean food
  - ▶ Teal : Japanese food
  - ▶ Green: Mexican food
  - ▶ Brown yellow: American food
  - ▶ Orange: food trucks
- ▶ 2 clusters with miscellaneous food vibe
  - ▶ Red and purple

Clusters show neighborhoods that are similar to each other in their food distribution

▶ Suppose you are a Japanese restaurant in Sawtelle.

▶ One day, you decided to open a branch in a different neighborhood with similar competition and food vibe.

▶ You best chance would be to go to neighborhoods belonging to the same cluster as Sawtelle such as Chatsworth, Encino or Metrose.

	Zip Code	Estimated Median Income	Neighborhood	City	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
15	90013	22808	Downtown Central, Downtown Fashion District	Los Angeles	34.044662	-118.24255	3	Japanese Restaurant	Asian Restaurant	Korean Restaurant	Food Truck	Seafood Restaurant
22	90025	78713	Sawtelle, West Los Angeles	Los Angeles	34.045006	-118.44527	3	Japanese Restaurant	Middle Eastern Restaurant	Mexican Restaurant	Chinese Restaurant	pub
43	90069	86403	Hollywood, Melrose	West Hollywood	34.090975	-118.38130	3	Japanese Restaurant	American Restaurant	Italian Restaurant	Café	French Restaurant
47	91311	82738	Chatsworth	Chatsworth	34.259052	-118.59426	3	Japanese Restaurant	Mexican Restaurant	Thai Restaurant	Breakfast Spot	Chinese Restaurant
48	91316	68720	Encino	Encino	34.168753	-118.51636	3	Japanese Restaurant	American Restaurant	Middle Eastern Restaurant	Bakery	Italian Restaurant
62	91604	99745	North Hollywood, Studio City	Studio City	34.143856	-118.39429	3	Japanese Restaurant	Mexican Restaurant	American Restaurant	Breakfast Spot	Food Truck

Conclusion

- Clustered 54 neighborhoods into 7 different clusters representing different food vibes.

- These clusters show high concentration of different cuisines.

- This information can help foodie find new neighborhood to try food, or for restaurateurs to decide where to open their new branch.