

# Finding a Unique Place to Eat in Burbank

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## 1. Introduction

### 1a. Background

People get hungry, even in Burbank. Living in the greater Los Angeles area has its advantages -- large population, diverse ethnic groups, and a good -- if busy -- transportation network. There are a lot of venues for someone to get food.

### 1b. Problem

A *hungry person* in Burbank (California) wants to get food. However, they've been to many places, and don't want "the same old thing." The question becomes: Where to go?

### 1c. Interest

In addition to the obvious interest of someone who hasn't eaten in several hours, this is a problem facing people curious about cuisine beyond that of their own background, residents of Burbank who might want to treat a guest to a novel experience, or someone with a bored palate. It is also the quandary facing many parents whose children want "something different."

Without a profile of venues a person has visited, how likely are they to find a unique place to eat in Burbank? Would they do better in neighboring Glendale? Or are opportunities better in nearby Los Angeles?

### 1d. Problem - Refined

Technically and practically, the problem of finding a unique place to eat needs to be clarified. The problem has two parts:

1. **Rate of Opportunity:** How many different choices are available? (And how close?)
2. **Suggestions:** What are the unique venue(s.)

## 2. Data

### 2a. Sources

The primary source of data, in terms of food venues and their respective categories, was Foursquare.com. The data is used in two different ways: to determine the Rate of Opportunity, and to generate a List of Suggested Venues.

The wikipedia page [Communities in San Fernando Valley](#) was useful in locating neighboring cities, and [Los Angeles County](#) for population of each city. A table from [Los Angeles Neighborhoods](#) was used to get the size of each city.

Because Foursquare searches are performed in a radius around a given location, [Zip Codes.com](#) API provided zip codes for each city. [Geopy](#) was used to determine geographic coordinates (latitude, longitude) of each zip code.

### 2b. Cleaning

As each city (Burbank, Glendale, Los Angeles) needed its own list, the following steps were performed for the data of each city:

- i. Make a list of the zip codes associated with the city. Remove zip codes not related to a potential venue address (i.e. P.O. boxes.)
- ii. Build a table of latitude and longitude for each zip code.
- iii. Perform a search request on Foursquare, based on the latitude and longitude (of each zip code), in a radius that encompassed the area of the zip code.
- iv. The search result included both duplicate venues (i.e. franchises), and out-of-zip venues (due to a radius being used.) The list was narrowed to include a unique occurrence of each venue name, and a restriction to only a given city's zip codes.
- v. In order to determine Rate of Opportunity, the population and size (area) of the city were extracted from their respective tables.
- vi. The results are not individually curated. As much as possible, the data was cleaned in a consistent and uniform way. Some results (eg. One result in the "Food" venue category) may be irregular. As with food, inherent variation in the names and categories adds unpredictability, flavor, and interest to the results.

### 2c. Visualization

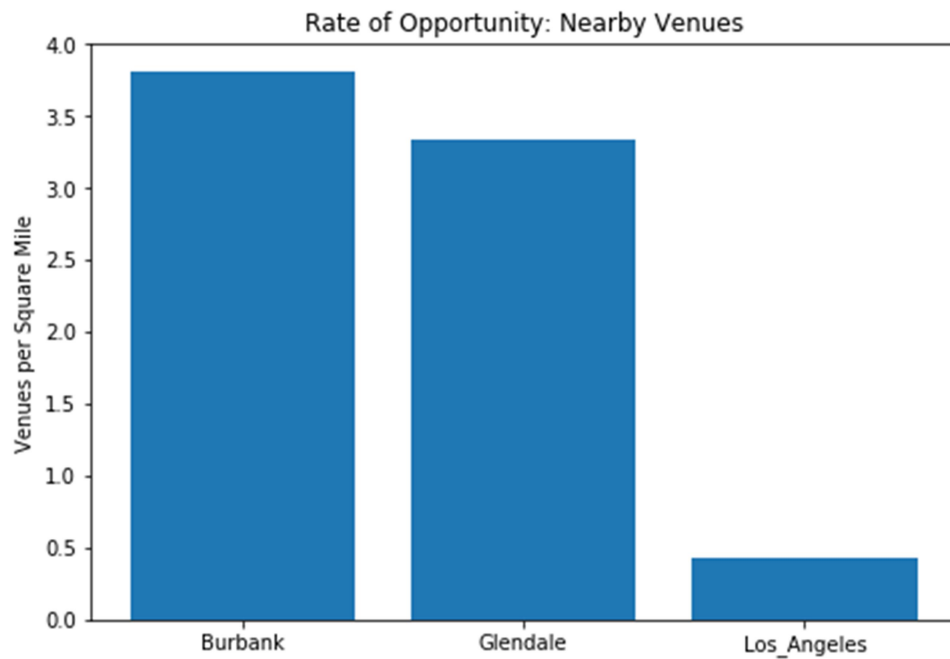
Once we had a list of venues for each city, we used Folium to plot their locations on a map. We also used Matplotlib to draw graphs comparing the cities.

### 3. Methodology

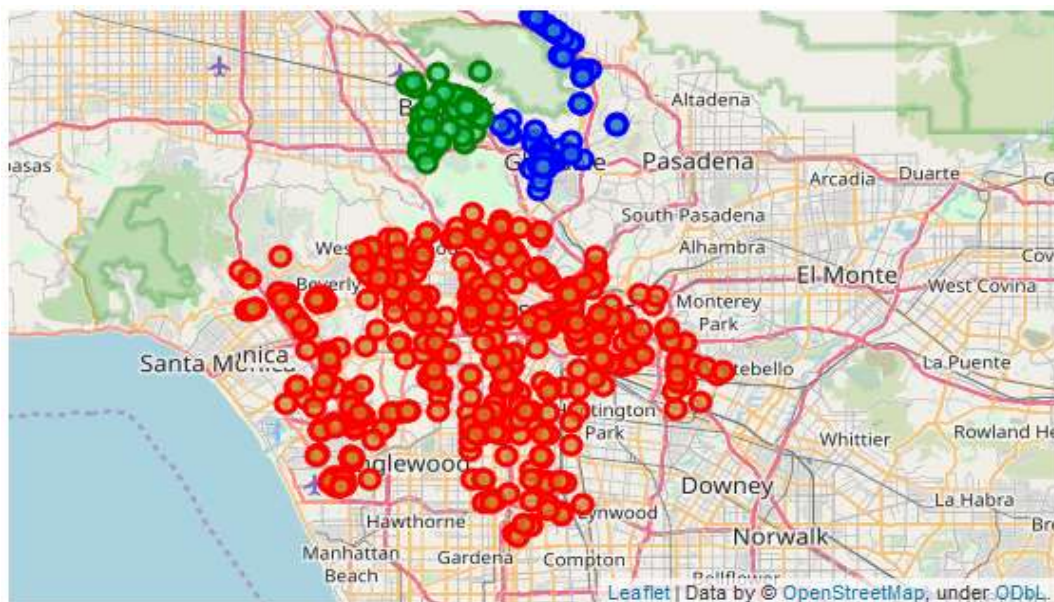
#### 3a. Determining Rate of Opportunity

Opportunity basically consists of being the right person at the right place.

The “right place” in the current context is the unique food venue. The higher the number of venues per square mile, the more likely a person is close to a unique one.



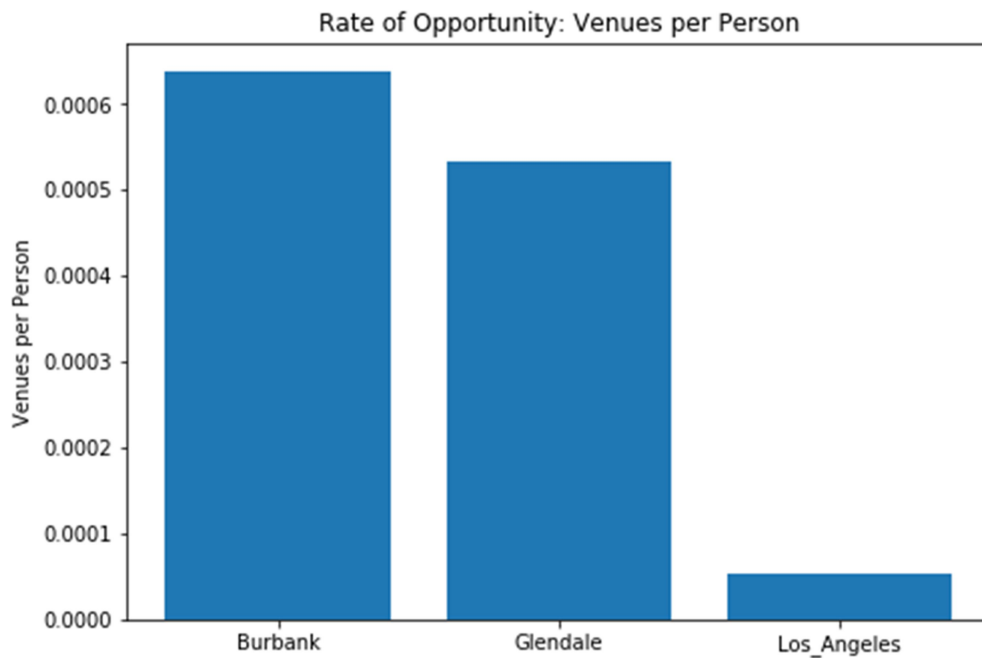
In this case, Burbank has a slight advantage in venue density over Glendale. Both of them have a large advantage over Los Angeles. This makes sense, looking at the relative sizes of the cities.



Map with food venues for Burbank (green), Glendale (blue), and Los Angeles (red.)

**Caution:** this rate is the Average for a given city. It doesn't hold equally, everywhere.

The other consideration in Rate of Opportunity is being “the right person.” For this, we use the number of food venues divided by the population. This is the rate at which one person (in a given city) happens to be at the unique venue.



Again, Burbank and Glendale have a large advantage over Los Angeles. With a population of nearly 4 million people, it is simply hard to be “the right person”, in Los Angeles, seeking a unique food venue.

As a result of this calculation, we determine that Burbank has a slightly better opportunity than Glendale -- and much better than Los Angeles -- of having the unique food venue.

### 3b. Making a List of Suggestions

Where the Rate of Opportunity was determined on a strictly mathematical basis, the methodology in obtaining suggestions is a very different affair. We've determined that Burbank is the best city (of the three) to find the unique food venue. Now the goal is to make a short list of unique food venue(s.)

The initial search on Foursquare generated the following:

- Burbank
  - 250 venues WITH duplicates
  - 77 unique venues
  - 66 unique venues within Burbank zip codes
- Glendale
  - 492 venues WITH duplicates
  - 148 unique venues
  - 102 unique venues within Glendale zip codes

- Los Angeles
  - 3250 venues WITH duplicates
  - 353 unique venues
  - 200 unique venues within Los Angeles zip codes

At this point, we have 66 venues for Burbank, 102 for Glendale, and 200 for Los Angeles. Obviously, the totals are much higher. We are looking for a unique food venue, so our basic tool is eliminating similar results.

Our next step is to look at the venue categories. A sampling of Burbank's categories reveals this:

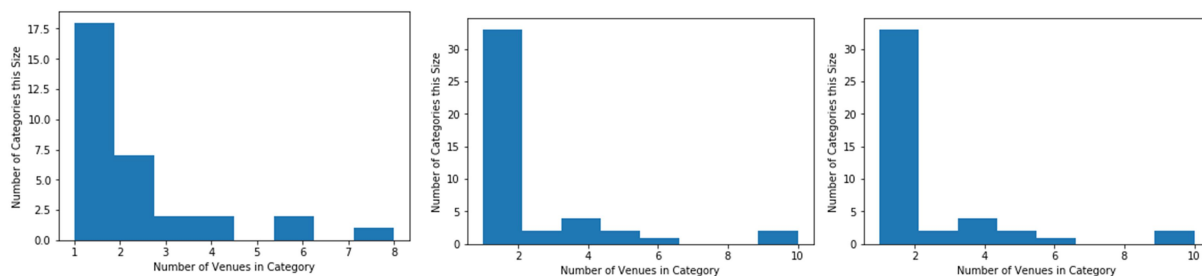
- Convenience Store
- Café
- American Restaurant
- Ice Cream Shop
- Breakfast Spot
- Coffee Shop
- Burger Joint
- New American Restaurant
- Wings Joint
- Farmers Market
- Fast Food Restaurant
- Pizza Place
- Fast Food Restaurant
- Mexican Restaurant
- Coffee Shop
- Coffee Shop
- Burrito Place

The venues in Glendale and Los Angeles are also categorized. But there is often more than one venue in each category. (For example, note “Coffee Shop” in the list above.)

In fact, here is the breakdown, by city, of venue categories:

- Burbank -- 66 categorized venues
- Glendale -- 102 categorized venues
- Los Angeles -- 200 categorized venues

Here is the distribution of venues in each category for Burbank, Glendale, and Los Angeles.



All three cities have a large number of venues in unique categories. But the categories with multiple venues can be eliminated. The rationale is that five “Hamburger” venues are less unique than one “Fish” venue.

For each city, we now have a list of categorically-unique venues -- in other words, one-of-a-kind in that city. They are:

- Burbank -- 18 venues
- Glendale -- 21 venues
- Los Angeles -- 27 venues

There remains one step yet. We’ve removed as much similarity as we can on a city-by-city basis. Now, we cross-compare the cities to find which (if any) venues in each city are unique.

## 4. Results

If we take the list of 27 one-of-a-kind venues in Los Angeles, remove any venues whose category is in either Burbank or Glendale, and we have the following 20 food venues uniquely found in Los Angeles:

<u>Category</u>	<u>Name</u>
Pub	Astro Pub
Creperie	Chocolate Bash
Bar	Cole's
Gourmet Shop	Eataly
Gastropub	Father's Office
Supermarket	Gelson's Market
Market	Grand Central Market
Hookah Bar	Habibi Cafe
Health Food Store	Lassens Natural Foods
Food	Lupe's #2
Brewery	Modern Times Beer: The Dankness Dojo
Salvadoran Restaurant	Paseo San Miguel
Southern / Soul Food Restaurant	Phat Birds
Lebanese Restaurant	Pi On Sunset
Taiwanese Restaurant	Pine & Crane
Residential Building(Apartment/Condo)	Spring Arcade Building
Bagel Shop	The Original Brooklyn Water Bagel Co.
Roof Deck	The Roof
Noodle House	Tsujita Annex
German Restaurant	Wurstküche

Doing a similar elimination on the 21 one-of-a-kind venues in Glendale narrows the list to the following eight:

<u>Category</u>	<u>Name</u>
Bookstore	Barnes & Noble
Kebab Restaurant	Byblos Mediterranean Bakery
Dumpling Restaurant	Din Tai Fung
Buffet	FUJi Buffet & Grill
Poke Place	Glendale Poke House
Filipino Restaurant	Max's of Manila
Halal Restaurant	The Halal Guys
Hot Dog Joint	Wienerschnitzel

However, Burbank had the statistically best Rate of Opportunity to find that unique food venue. The 18 one-of-a-kind venues in Burbank shrank to only three -- not available in Glendale or Los Angeles -- venues:

<u>Category</u>	<u>Name</u>
Wings Joint	Buffalo Wild Wings
Burrito Place	Corner Cottage
Scandinavian Restaurant	IKEA Restaurant

Based on the process we've gone through, these are the recommended unique food venues found only in Burbank.

## 5. Discussion

In this project, we used data to determine a unique food venue in Burbank. We determined the optimal city in our group of three, on the basis of venue availability both geographically and per-person. We then narrowed lists of unique venues and compared venues across cities, to come up with a short list of unique venues available only to each of the three given cities.

There are, obviously, a few flaws with this approach. Potential venue candidates may not have been included because they were not -- or incorrectly -- listed in Foursquare. Others may have been eliminated because their name was the same as another venue, despite being fundamentally different. The Rate of Opportunity is not consistent across any given city, and may have steered the search astray. The venue categories are not consistent, fully descriptive, or detailed. A boring, common venue may serve an food item not found elsewhere. I'm also pretty sure there are other Buffalo wing-style venues and Burrito venues out there. There was also a "Byblos" in the earlier LA listing, under the category "Mediterranean Restaurant" -- compare this with "Byblos Mediterranean Bakery", uniquely in Glendale. There might be a problem there. The results are not only methodology-related, but also only as good as the source data.

## 6. Conclusion

For our hungry person, the problem is now resolved. Not only do we have unique choices in Glendale and Los Angeles, but -- most importantly -- in Burbank.

<u>Category</u>	<u>Name</u>
Wings Joint	Buffalo Wild Wings
Burrito Place	Corner Cottage
Scandinavian Restaurant	IKEA Restaurant