
The Battle of Neighbourhoods

IBM Data science Professional Certificate Capstone Report

Which type of cuisine restaurant would be the best option to open in Bay Area and near which company?

Naman Manchanda – 28 July 2019



Introduction

Silicon Valley needs no introduction. It is considered as the cradle of innovation. Many tech companies have their offices and head quarters situated in the Bay Area. But what if someone wants to start a restaurant business in the Bay Area? There are already many restaurant chains in the valley and near the offices of almost every tech company. So how can someone address this problem?



BUSINESS PROBLEM

The main idea behind the project is to analyse the restaurant chains in the Bay Area near the tech companies and to look for the areas where a successful restaurant business can be started. The other objective of the project is to pay special attention to the restaurant cuisine. Some neighbourhoods might already have a large number of same cuisine restaurants. Starting a restaurant in such an area won't be much profitable. So to explain the project in an abstract, it aims at analysing the restaurants and in particular the cuisine of the restaurant near the Bay Area and to find out the best possible neighbourhood for opening a restaurant.

Data Description

The data requirements include:

- ➔ List of all the tech companies
- ➔ The coordinates of the offices
- ➔ The list of all the restaurants near the offices using Foursquare API

How the data will be used to solve the problem?

Firstly, the data will be cleaned to get the list of some of the companies of the area. After the pre-processing, the list of the offices will be used to explore the venues near the offices within the radius of 1000 using the Foursquare API. The venues will be filtered to obtain the list of the restaurants in the region. Then using KMeans clustering and data visualisation using Folium, a clear idea will be obtained on where to start the next restaurant business. The clusters' evaluation will describe the best possible regions to open which particular cuisine restaurants.

Data extraction source

<https://github.com/namanmanchanda09/tech-companies-bay-area/blob/master/Bay-Area-Companies-List.csv>

The Bay Area companies list is an open source list created by Mr. Connor Leech (<https://github.com/connor11528>) and is available on Github. The repo has been forked from Mr. Connor for the purpose of analysis and visualisation. The .csv file has been uploaded on IBM cloud and will be used for the analysis.

Bay-Area-Companies-List.csv file's top 5 rows

Company Name	Tags	Location	Investors	Description	Website	Founded Year	Address	Lat	Long	Company Size	Tech stack	Marketing Stack	Design Stack	Product Stack
0 3scale	B2B Software and Services, Developer Tool	San Francisco	NaN	Unlock the power of your APIs (powered by RedHat)	https://www.3scale.net/	2007.8	450 Townsend St 1004, San Francisco, CA 94107	37.774634	-122.399642	1-12	NaN	NaN	NaN	NaN
1 8tracks	Music, Consumer Goods and Services	San Francisco	NaN	8tracks is the best place to make and discover...	https://8tracks.com/	2008.8	51 Sharon St. San Francisco, CA 94114	37.765227	-122.429756	13-40	NaN	NaN	NaN	NaN
2 10 by 10	B2B Software and Services, Talent Acquisition	San Francisco	Y Combinator	We help independent recruiters and agencies ea...	https://www.10by10.io/	2015.8	San Francisco, CA	37.774809	-122.479415	1-12	NaN	NaN	NaN	NaN
3 15Five	Employee Engagement	San Francisco	NaN	15Five software elevates the performance and e...	15five.com	2011.8	12 Gallagher Ln, San Francisco, CA 94103	37.761714	-122.403206	61-100	NaN	NaN	NaN	NaN
4 21Tech	Real Estate and Construction, Financial Technol...	East Bay	NaN	Enterprise Asset Management: 21Tech has broad ...	21tech.com	1996.8	1330 Broadway #1530 Oakland, CA 94612	37.803905	-122.270764	13-40	NaN	NaN	NaN	NaN