family-owned

Fast Food Chain

Customer Segmentation

Cinny / Scofield / Jackie

https://github.com/CinnyLin/dma/tree/master/2-CustomerSegmentation

Data Overview

ticket_id	order_timestamp	location	item_name	item_count	lat	long
2134647	2019/3/2 19:59	8	shake	3	41.89	-87.62
2134647	2019/3/2 19:59	8	burger	4	41.89	-87.62
2134647	2019/3/2 19:59	8	fries	4	41.89	-87.62
3193088	2019/3/26 18:06	1	shake	3	41.88	-87.63
3193088	2019/3/26 18:06	1	burger	3	41.88	-87.63
3193088	2019/3/26 18:06	1	fries	3	41.88	-87.63
6104286	2019/8/5 19:03	3	shake	5	41.88	-87.63
6104286	2019/8/5 19:03	3	burger	5	41.88	-87.63

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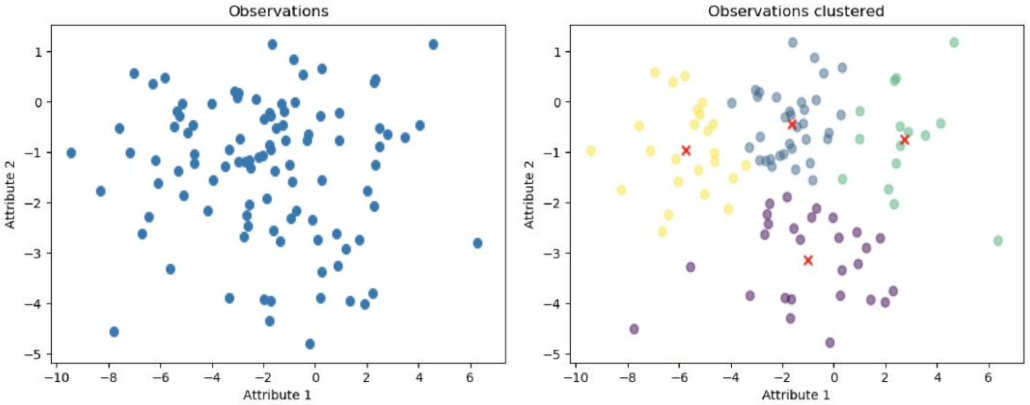
185,452 transactions

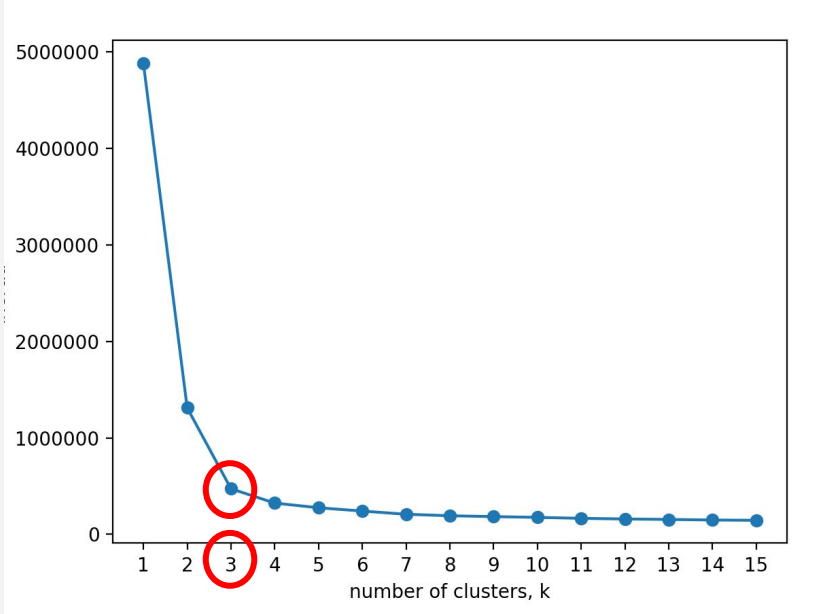
Model Overview

K-means clustering is an unsupervised learning machine learning algorithm that separates data points into k clusters based on the aggregate similarity of their attributes.

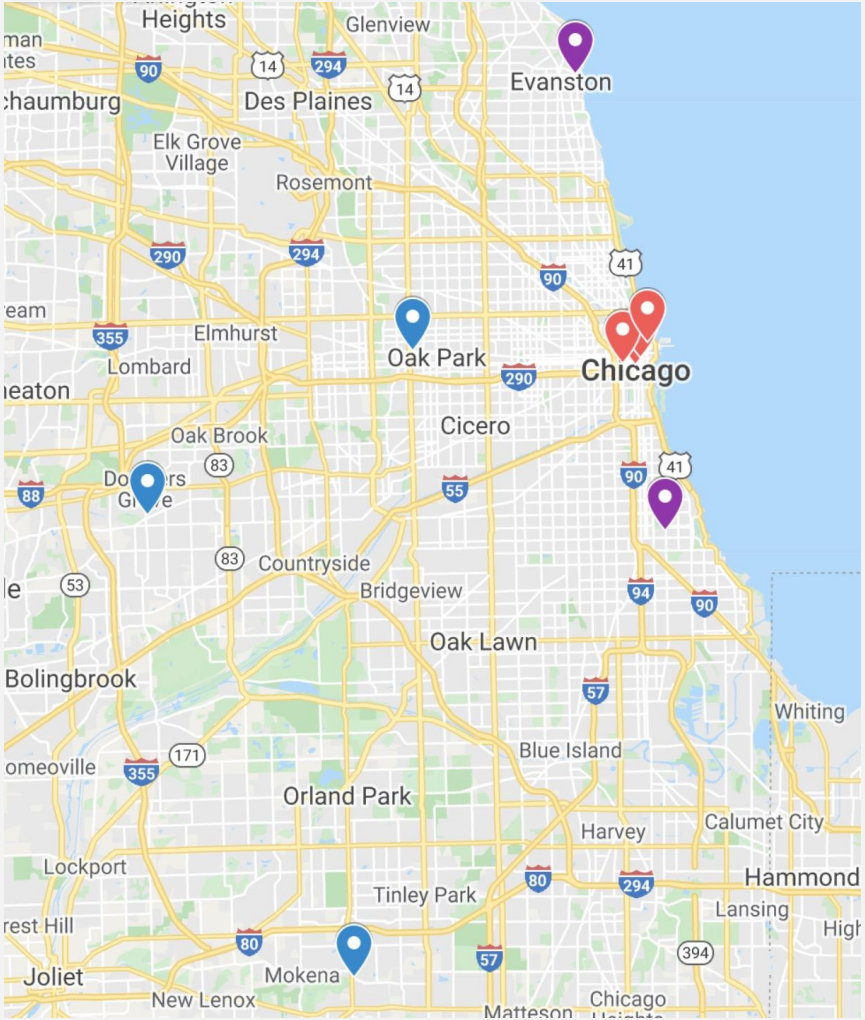


Model Overview

How do we know what k to pick?



Store Locations



Cluster 1: Store - 1,3,5,8

Cluster 2: Store - 2,6

Cluster 3: Store - 4,7,9

Clustering Model Output

Cluster 1:

Avg Burger - 0.35 — **Store - 1,3,5,8**

Avg Fries - 2.23

Avg Shake - 0.12

Frequent Hours of the day - 11am-13pm

Cluster 2:

Avg Burger - 1.73 — **Store - 2,6**

Avg Fries - 1.79

Avg Shake - 0.32

Frequent Hours of the day - 12am-1am

Cluster 3:

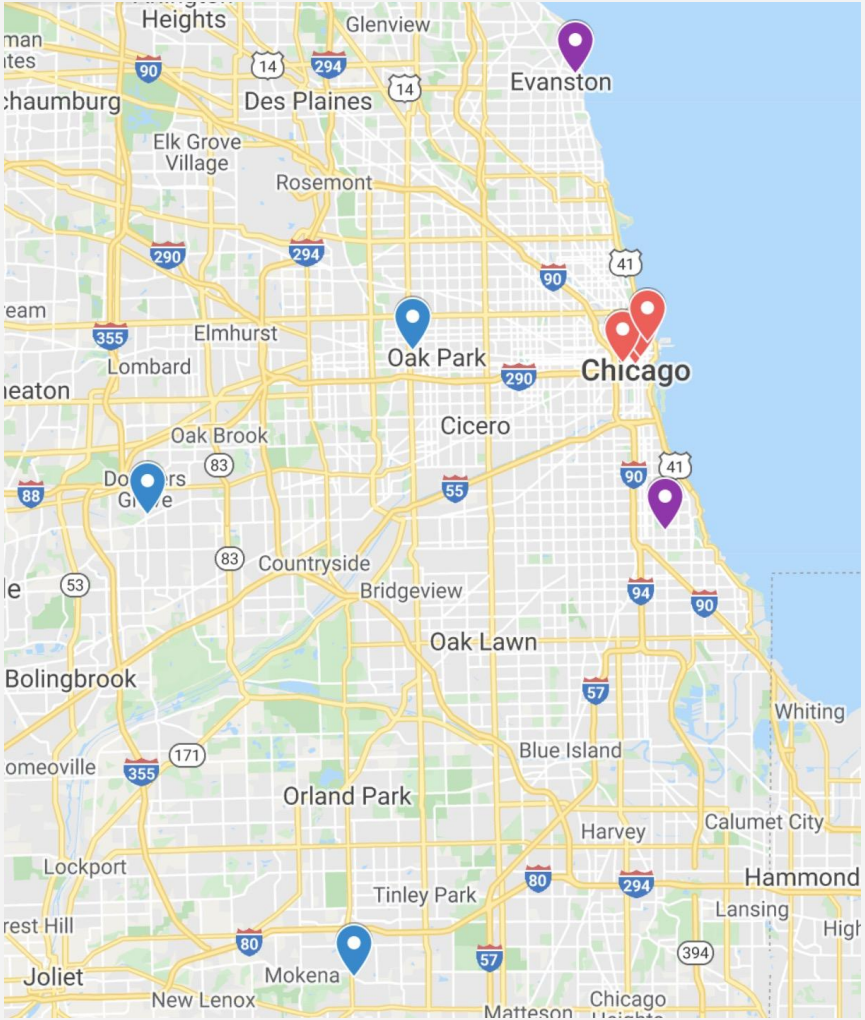
Avg Burger - 3.18 — **Store - 4,7,9**

Avg Fries - 3.38

Avg Shake - 2.83

Frequent Hours of the day - 17pm-19pm, 23pm

Store Locations



Cluster 1: Store - 1,3,5,8
downtown Chicago
schools, offices, shopping centers

Cluster 2: Store - 2,6
not-so-downtown downtown
UChi, parks, beaches

Cluster 3: Store - 4,7,9
residential areas,
pick-ups by avenues

Segment Attractiveness

Cluster 1:

-Store 1,3,5,8 - around 4k sales each - 16k total
-Most popular dish - fries
-Popular visit time - lunch time
-Least amount of profit

Cluster 2:

-Store 2,6 - around 8k each - 16k total
-Most popular dish - set meal of burger and fries
-Popular visit time - around midnight
-Medium most amount of profit

Cluster 3:

-Store 4,7,9 - around 6.5k sales each - 20k total
-Most popular dish - all
-Popular visit time - early or late evening
-Most amount of profit

Customer Profiles

Cluster 1: professionals

- expediency - convenience / limited time
- preference for snacks / sides
- low demand / high density
- individual order
- high customer volume

Cluster 2: students / tourists

- University routines / weekend get-away
- individual order
- stable & high demand

Cluster 3: residents

- back from work at the early/late night
- group order
- high demand of all products
- party / family occasions, etc.

Marketing Initiatives

Cluster 1:

1. Rewards on buying fries (Ex: the 10th fries is free)
2. Explore other options (discount on meal set)
3. Increase the amount of counters and enlarge pick-up space
4. Nearby delivery (more time, more diversity)

Cluster 2:

1. Campus / Tourist Attraction delivery
2. Student Discount
3. Collab with university in providing meals for festivals/activities...
4. Take one for your classmate!

Cluster 3:

1. Discount on more order
2. family membership
3. children meals
4. Pick-up style

Thank You!