Organization of Slide

Quantitative Problem
1. One hot encoding based method
2. Word Embedding Based Method
3. Inferences

Qualitative Problem
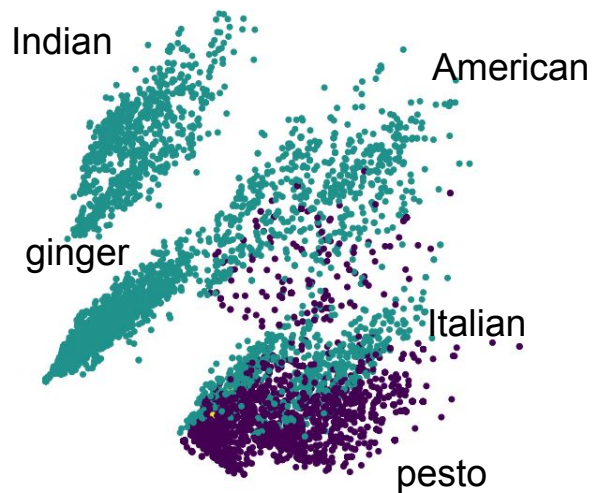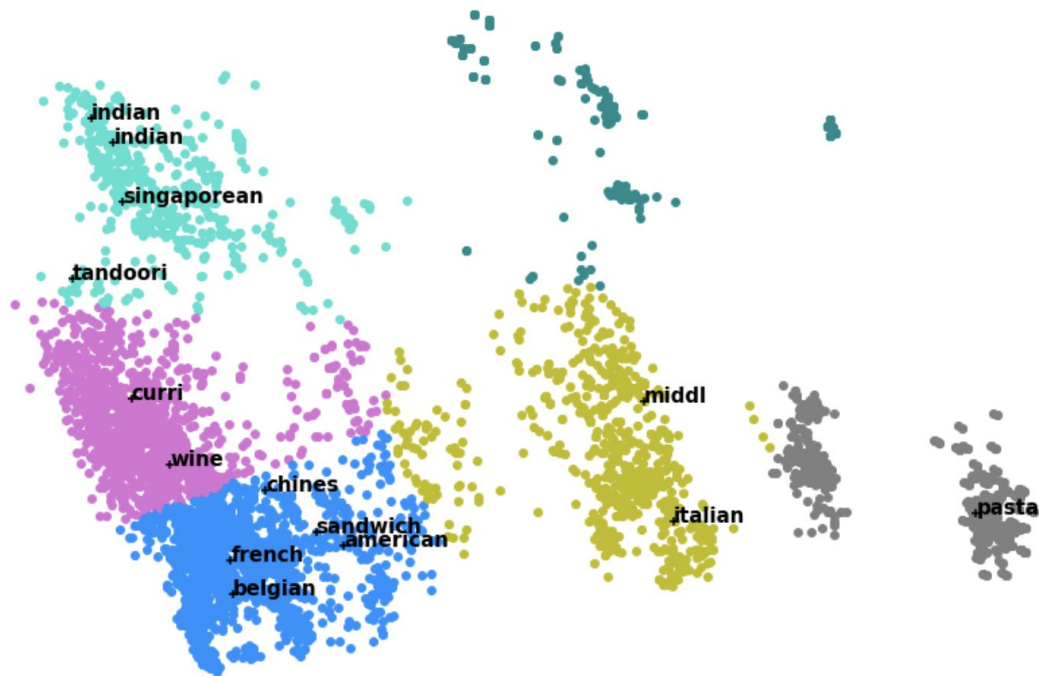1. Customer Lifetime Value (CLV)
2. Share Of Wallet (SOW)

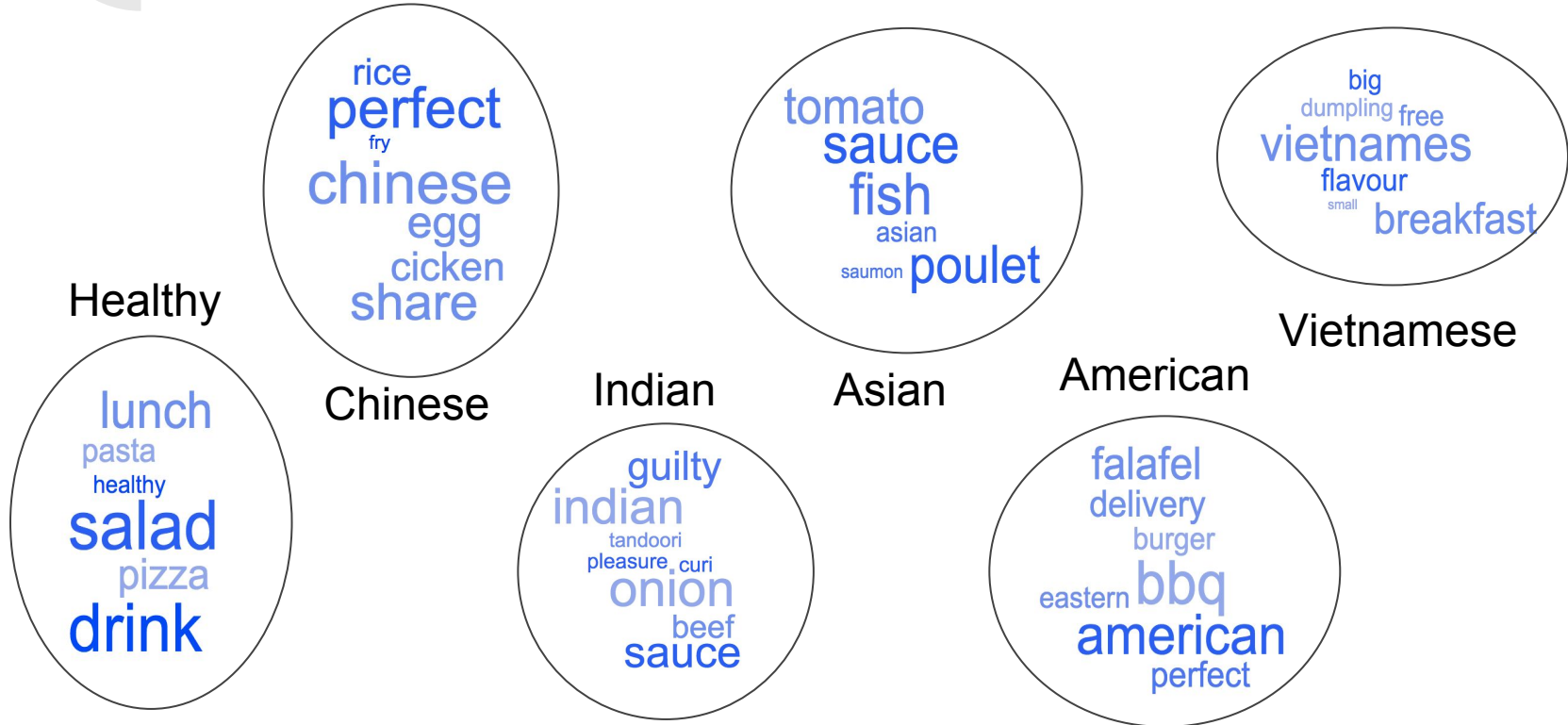# Method – 1 : One-hot encoding + KMeans clusters

RESTAURANT_NAME	CITY	COUNTRY	R_PRIMARY_LOC_TAG	R_OTHER_LOC_TAG	R_MENU_CATEGORY	R_OTHER_MENU_TAGS	ITEM_NAME
Las Iguanas - Torquay	Torquay	UK	south american	NaN	south american	burritos, burgers, curry, Meal Deals	Crayfish
The Shed Hurstville	Sydney	Australia	australian	NaN	australian	breakfast, eggs, juices, Lunch, milkshakes, Pa...	Frappe Mocha
Honest Burgers - Greenwich	London	UK	british	NaN	british	burgers, Guilty pleasures, Only on Deliveroo	Mature Cheddar Cheese
Indian Nights	Chelmsford	UK	indian	NaN	indian	NaN	Tandoori Roti (d) (Wheat)
Revolution - Leicester	Leicester	UK	american	british	burgers	american, british, pizza, Big flavours, small ...	Tomato Sauce

Method - 1 : One-hot encoding + KMeans clusters

Method 1 : What we see?
Most frequent occurrences per cluster

Healthy

lunch
pasta
healthy
salad
pizza
drink

Chinese

rice
perfect
fry
chinese
egg
cicken
share

Indian

guilty
indian
tandoori
pleasure curi
onion
beef
sauce

Asian

tomato
sauce
fish
asian
saumon poulet

American

falafel
delivery
burger
eastern bbq
american
perfect

Vietnamese

big
dumpling free
vietnames
flavour
small breakfast

Method 2 : Clustering Using Word Embeddings

1000 Words (Frequency + Manually Curated)

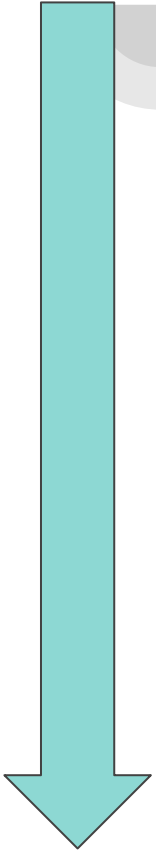Term Frequency (tf-idf)

Word2VecModel

Tokenization+Stemming

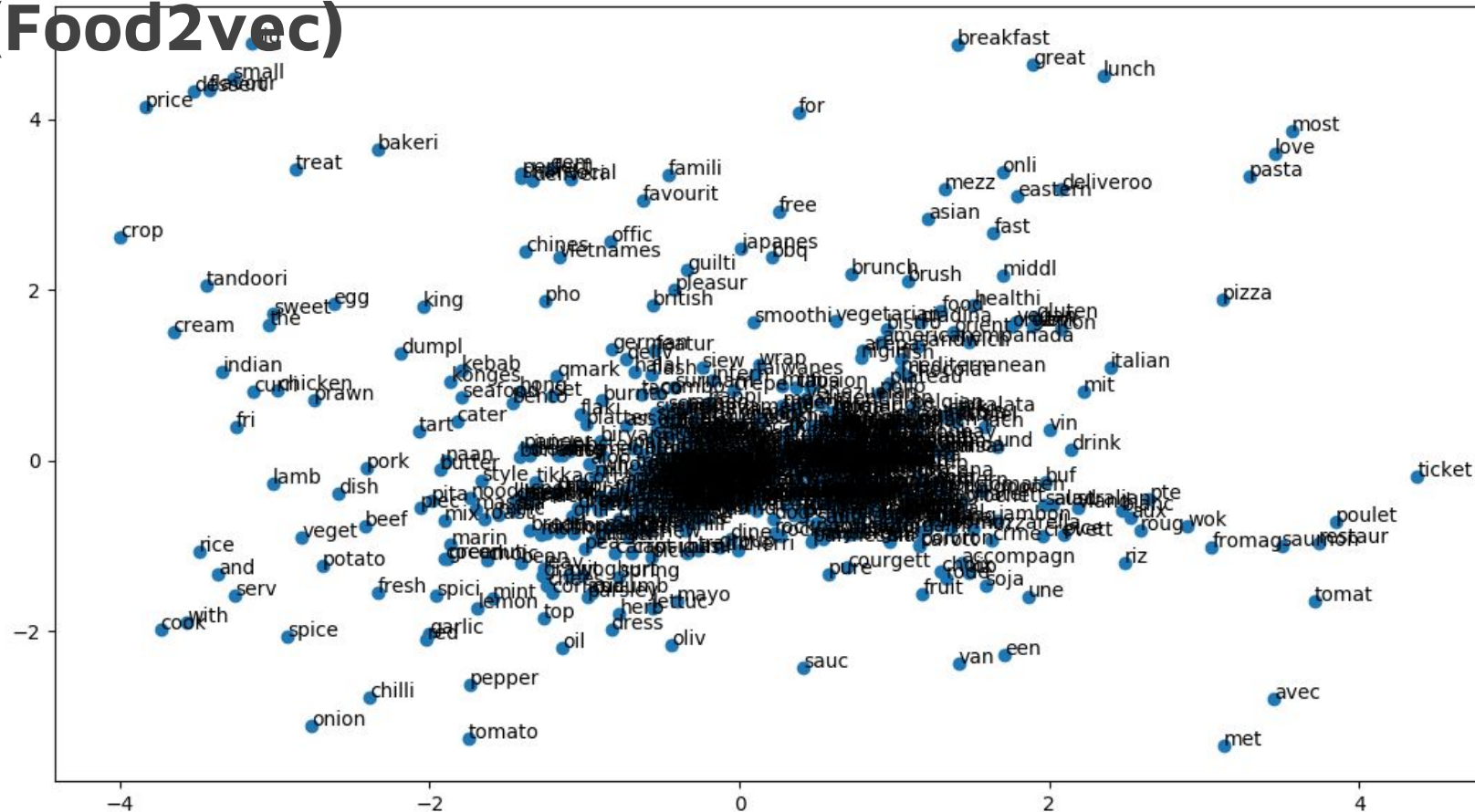Dish = **pepper**s and **onion**s cooked in a **tomato sauce** and finished with fresh **chilly**

Dish Vector = **Σ** (frequency weight * Ingredient2Vec)
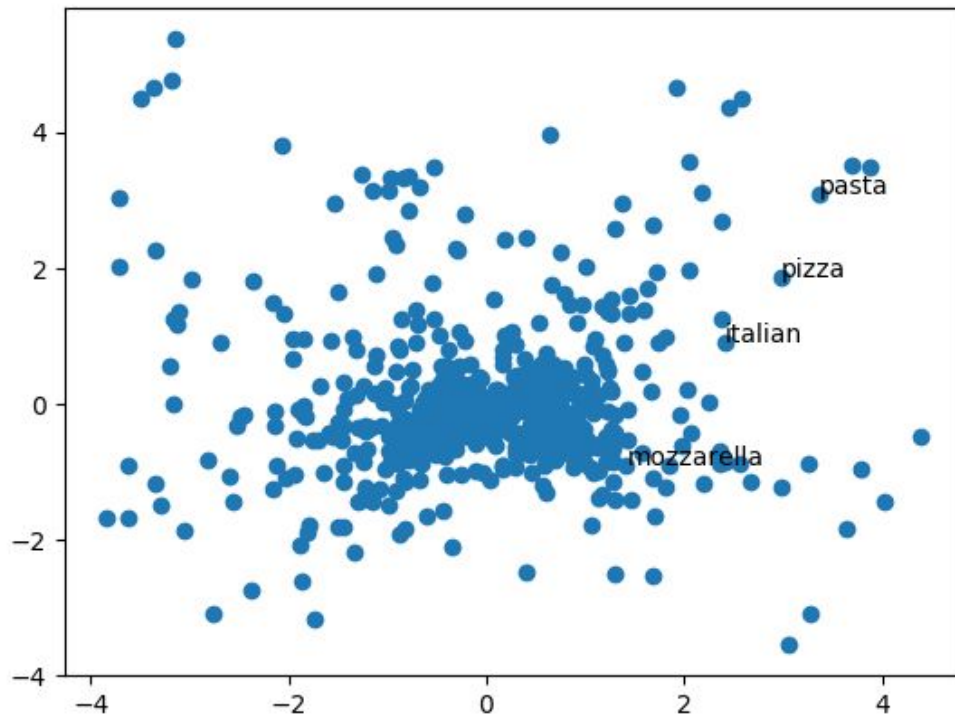
Dimensionality Reduction (PCA) + Clustering

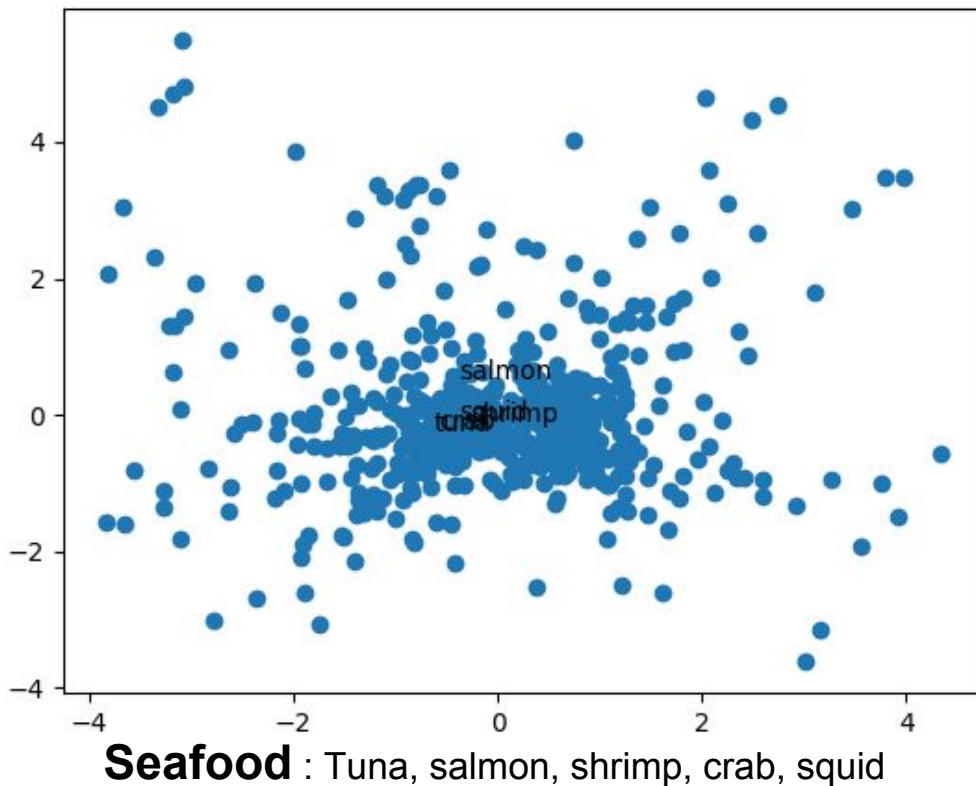TSNE Visualization

Food to Numeric Representation (Food2vec)

Food to Numeric Representation (Food2vec)

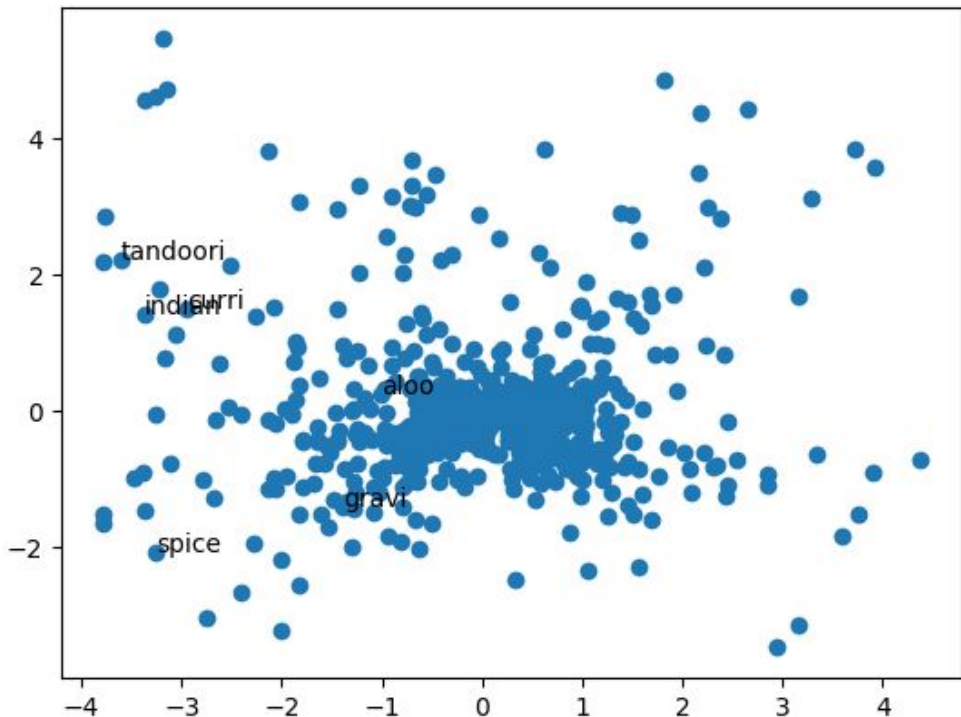**Italian Food** : Pasta, Pizza, Italian, Mozzarella

Food to Numeric Representation (Food2vec)

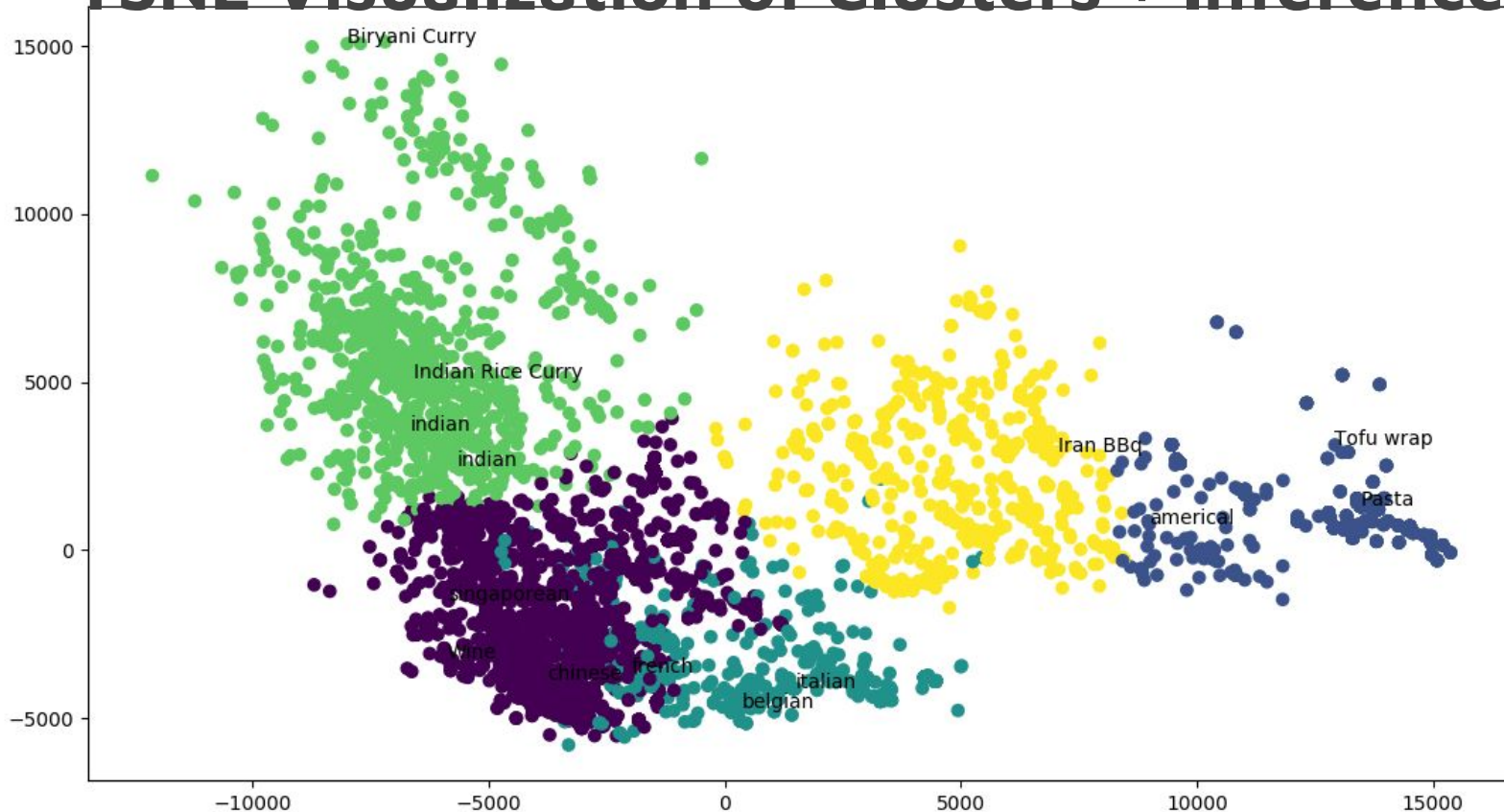**Seafood** : Tuna, salmon, shrimp, crab, squid

Dish to Numeric Representation (Dish2vec)

Indian Food : aloo, tandoori, indian, curry, spice, gravy

TSNE Visualization of Clusters + Inference

Biryani Curry

Indian Rice Curry

indian

indian

Iran BBq

Tofu wrap

americal

Pasta

singaporean

wine

chinese   french

belgian   italian

Main Goal: Provide client segmentation based on the prediction of profitability attractiveness.

Methodology: Prediction of future customer behavior based on past data from Deliveroo through the calculation of the following variables per customer:

   Output:
   (1) Lifetime
   (2) Frequency,
   (3) Monetary Spend,
   (4) Share of wallet (SOW)

Customer Lifetime Value Method (CLV)

customer_id	recency	frequency	monetary_value
4	345	3	25.125
18	0	0	14.960
21	12	1	37.555
50	0	0	6.790
60	0	0	21.750

Recency
Frequency
Monetary Value

} # of future purchases by a certain customer

Share of Wallet (SOW): A marketing tool which calculates how much of a customer's expenditure on the same type of product goes to a specific company.

Share of Wallet (SOW)

Client Lifetime Value (CLV)

	Low SOW	High SOW
High CLV	**CELL 2** Invest heavily in conversion strategies to enhance profits	**CELL 4** Introduce loyalty programs to retain high-value customers
Low CLV	**CELL 1** Consider devoting resources to other customer categories	**CELL 3** Invest moderately to retain customers