

Food Review & Analysis

Guide

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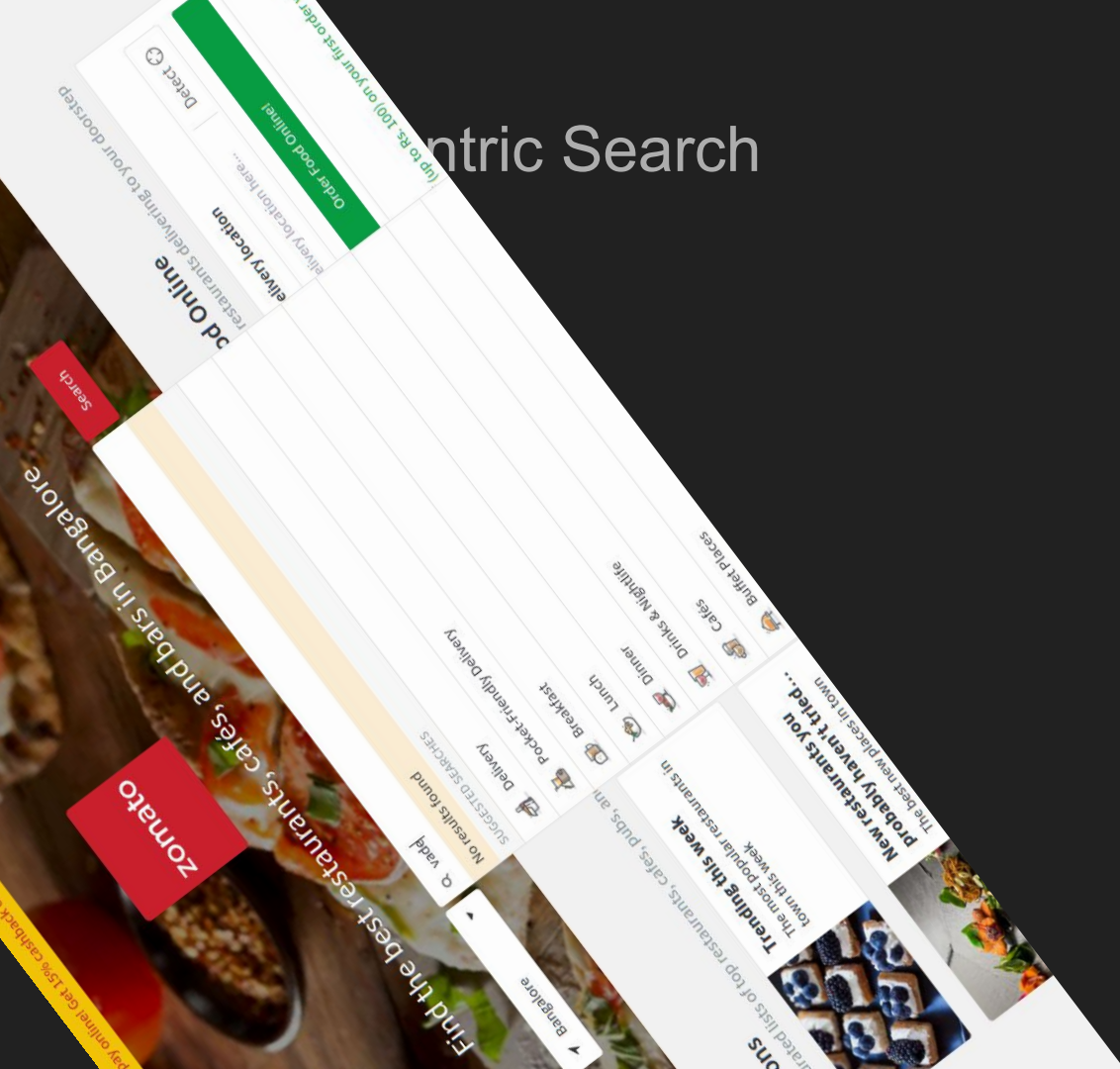
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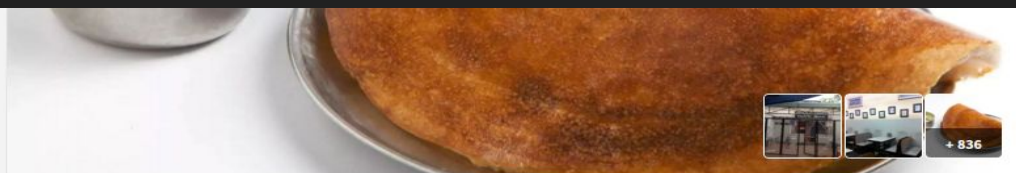
The IDEA...

Two things missing in today's Food Searching Platforms :

Centric Search



No mention of specialities of restaurant

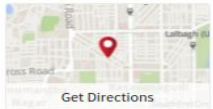






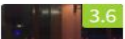













Vidyarthi Bhavan

Basavanagudi • Quick Bites

4.2/5 2813 votes

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Overview	Menu	Reviews (1199)	Photos (839)
<p>Phone number 080 26677588</p> <p>Cuisines South Indian</p> <p>Cost ⓘ AVERAGE ₹150 for two people (approx.) Cash only</p>	<p>Opening hours Today Closed See more</p> <p>Address 32, Gandhi Bazaar, Near Gandhi Bazaar Circle, Basavanagudi, Bangalore</p>  <p>Get Directions</p>	<p>Highlights</p> <ul style="list-style-type: none">✓ Breakfast✓ Home Delivery✓ Vegetarian Only <p>Featured in Collection Legendary outlets</p> <p>Known For Decades old, iconic restaurant for South Indian Treats and their Benne Masala Dosa!</p> <p>Report Error ✓ Claimed listing</p>	

 <p>Empire Restaurant JAYANAGAR Biryani, Kerala</p>	 <p>Tree Top WILSON GARDEN All you can eat. CALL NOW!</p>	 <p>Clove JAYANAGAR North Indian, Chinese</p>			
 <p>AB's - Absolute Barbecues JAYANAGAR Experience the best Buffet in Bangalore</p>	 <p>3.6 Cable Car JAYANAGAR North Indian, Italian</p>	 <p>3.4 Beetle Juice Bar - Springs Hotel & Spa BASAVANAGUDI Finger Food</p>			
 <p>Addhuri Udupi Bhojana BANASHANKARI NOW OPEN! All you can eat at Rs.150!</p>	 <p>3.3 Timepass Dinner BASAVANAGUDI North Indian</p>	 <p>3.6 Aagaman Veg JAYANAGAR Buffets starting @283/-*</p>			
<h3>Cafes</h3> <p>Coffee, snacks & beverages</p> <table border="1"><tbody><tr><td><p>Unique Brew Sports Cafe JAYANAGAR Fun , Food and Games Coming</p></td><td><p>3.3 Leanin' Tree Art Cafe BASAVANAGUDI Cafe, Continental</p></td><td><p>3.3 Costa Coffee JAYANAGAR Cafe</p></td></tr></tbody></table>			 <p>Unique Brew Sports Cafe JAYANAGAR Fun , Food and Games Coming</p>	 <p>3.3 Leanin' Tree Art Cafe BASAVANAGUDI Cafe, Continental</p>	 <p>3.3 Costa Coffee JAYANAGAR Cafe</p>
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Problem Statement

- I. Tagging of food menu items by user reviews for restaurants, to identify best/worst dishes of a place as mentioned by users and also to identify best places serving a particular dish as per user experience.

DataSet

I. Restaurants - 17

II. 40 reviews per restuarants

III. A total of 715 menu items

*All humanely annotated

Restaurants we thought of ...

Vidyarthi Bhavan <4.2>

Tim Tai <4.2>

Taaza Thindi <4.9>

Mamagoto <4.3>

Indian Coffee house <3.6>

Kapoor's cafe <4>

Shri Sagar <4.7>

Punjab grill <4.2>

Brahmin's Coffee bar <4.9>

Kopper kadai <4.1>

Chetty's Coffee <3.3>

Kesariya <3.9>

Sri laxmi venkatesh coffee bar <4.4>

Dal tadkaa <2.5>

Milano ice cream <4.9>

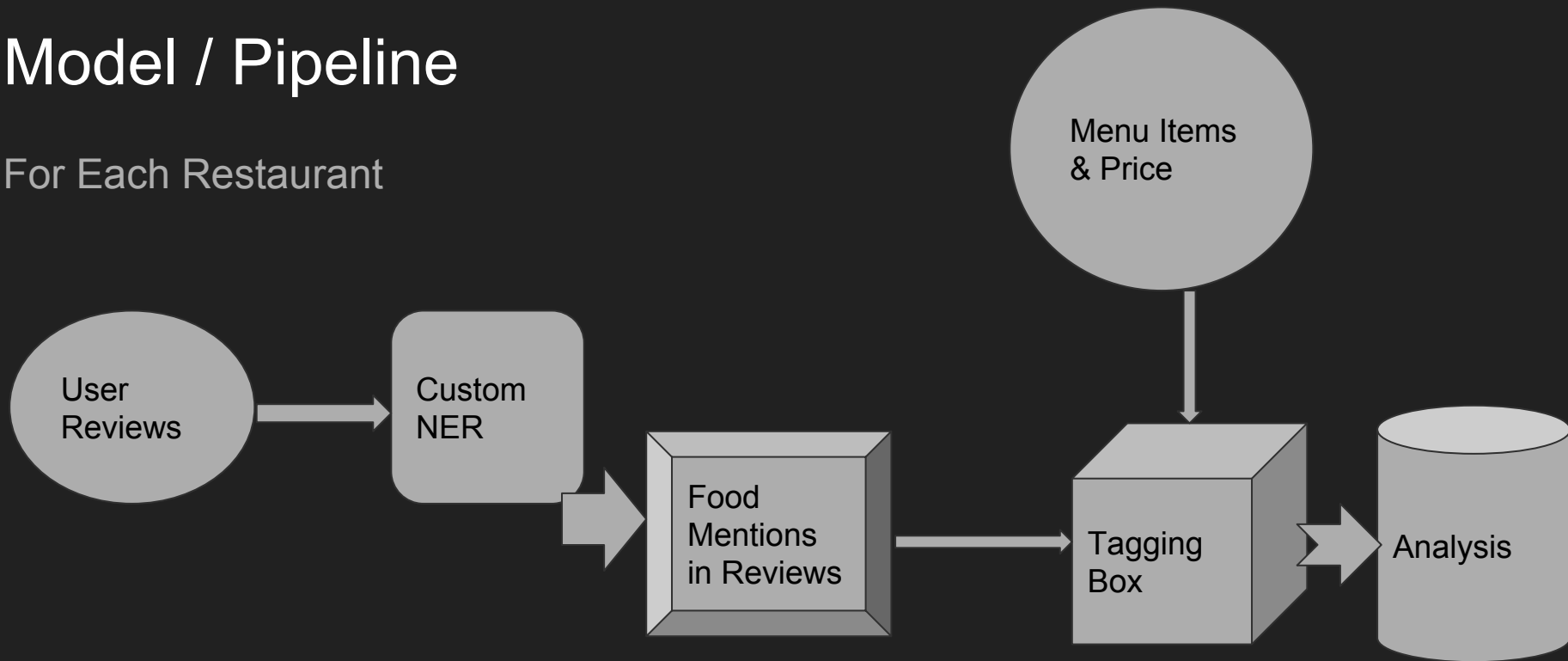
Belgyum <4.7>

Mr. Idli <2.6>.

Demo ...

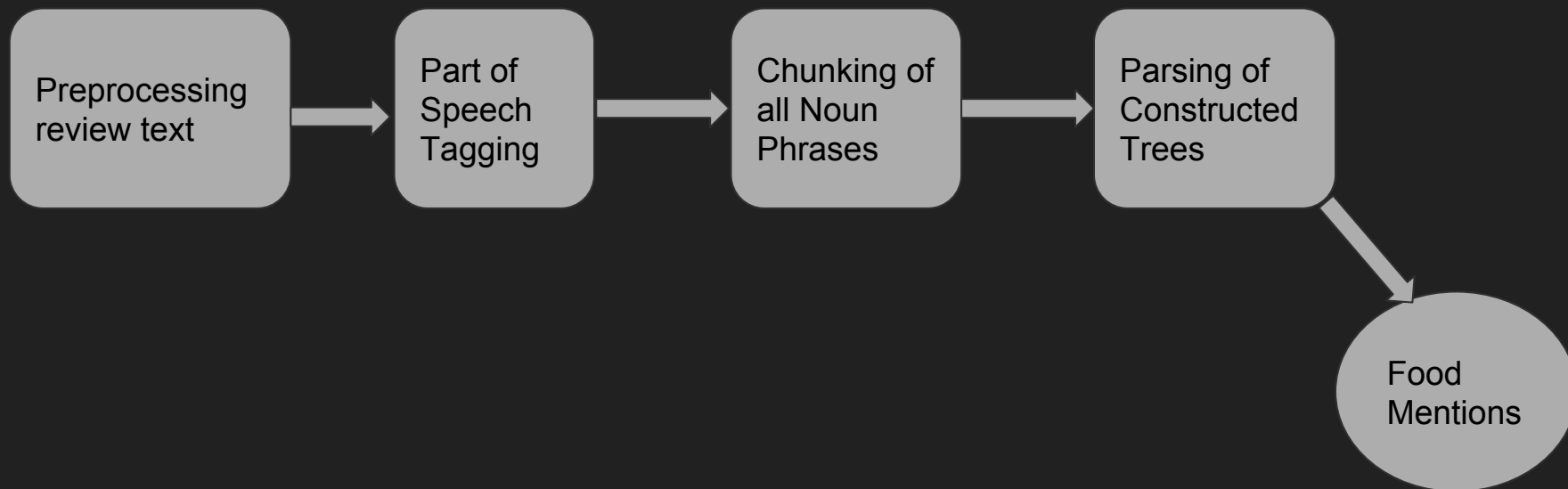
Model / Pipeline

For Each Restaurant



Custom Named Entity Recognizer

> Not learnt (due to unavailability of dataset), but rule based



Tagging Box

- I. ExactMatch ('Noodles','Noodles')
- II. SubstringMatch ('Chef's Special Bhaji Pao', 'Bhaji Pao')
- III. PartialMatch ('Fetter Cheese Pasta', 'Cheese Paste')
- IV. FuzzyMatch ('Masale Dose', 'Masala Dosa')
- V. PercentMatch ('Red Pasta', 'Past')

DataStructure

ALIAS

RestName : Id

DISH SEARCH

MenuItemName:[(RestId, RestRating, Price, MenuItemRating, MenuItemPopularity)]

REVIEWS

RestId :
[(Reviews,Rating)]

RESTAURANT SEARCH

RestId:(Rest_Rating,{MenuItem:(Price,Rating,Popularity)})

MENU

RestId : (Rest_rating,[MenuItem, Price])

MENTION

RestId:{Mention:[Popularity, Rating]}

Hurdles {Data : The Missing Piece}

- I. Zomato API erroneous
- II. Image to Text Cluttered
- III. Zomato US Menu Empty Calls
- IV. Yelp Dataset (has latitude & longitude of restaurants, not menus)
- V. Yelp API does not exposes Menus, obtained from Loci
- VI. Third Party Indian Menu APIs hoaxes
- VII. Last Resort - Manual Creation

Visualization Inferences

1. Graphical Representation helps decipher hidden correlations among entities.
2. We modelled some visualizations to infer certain obscure correlations.

Bubble Plot

1. Represents 3-dimensions
2. Average Price, Average Review Length & Avg Rating
3. Modelled for individual restaurant

Inferences:

- Smaller bubbles have lower ratings, bigger have larger.
- Heavy Price doesn't mean review is good.
- When people write more, means they loved the place :)

Scatter Plot [Price vs Review Length]

Inferences:

- When customer pay more, they don't talk much about it.

Bar Charts [Restaurants]

Visual comparison of different restaurants.

Bar Graph - Review Length vs Average Rating

X-axis - Average review length

Y-axis - Rating associated with the review.

Inferences -

1. Unremarkably higher number of more expressive reviews for highly rated dishes.
2. Also interesting is the many reviews with high number of words for dishes rated as low as 1.5 (possibly expressing the discontent).

Donut - Rating vs Number of Reviews

Serves to highlight the percentage of the number of reviews for a particular rating.

Inferences -

1. A general trend observed is the high number of reviews for dishes that are rated highly by the users. (And consequently the less number of reviews for dishes with low ratings)

Scatter plot - Price vs Rating

X-axis - Price of a menu item

Y-axis - Rating of a menu item

Inferences -

1. An upward trend among the ratings as the price of the menu items increases.
2. However reasonably high ratings are observed for a number of lower prices menu items as well.

Scatter plot - Price vs Popularity

X-axis - Price of a menu item

Y-axis - Popularity(total number of reviews) of a menu item

Inferences

1. The number of reviews for most of the dishes fall within a specific range of 10-15 reviews. Not very strongly dependent on the price of the dish.
2. Very high number of reviews seen for a few dishes is likely due to the generally high demand/popularity of the dish.

Scope

Machine Learning Components we skipped because of data unavailability:

I. NER

II. SVM to identify mentions of food mentions

III. Tagging Box Implementation via SVM with algorithm outputs as features.

PS - Both II & III need human annotation of sizable data as features for predictions.

Thank you