

# Contextual Language Analytics to improve Customer Service for a Delivery Platform

Digital  
Services

Success Story

## Customer Background

Client is one of the India's largest online food ordering and delivery platforms. The food delivery service is operational in over 500 cities, with an aggressive expansion plan in the works. Given the large volume of traffic and numerous customers using the platform, it is critical to ensure proper and effective customer outreach and customer service. One of the major mediums used by the client to effectively communicate to their customer is using the in-app chat functionality.

## Business Requirements

Client had access to all the chat messages from their customers describing their issues while using the app or the quality of the food. The client's interest was to analyse the problems mentioned by the customers in the chat and derive insights from it, in a timely manner.

## Challenges

- Processing large volumes of unstructured data, in the form of chat messages.
- Understanding the prominent keywords and correlating with the various categories and sub-subcategories.
- Timeliness to complete the entire process - from receiving the chat message to acquiring the insights to addressing the issue.

## Objective

To improve customer service by effectively deriving insights from chat messages to appropriately address customer issues, leveraging text analytics

## Solution Overview

- teX.ai was leveraged to analyse thousands of chat messages contextually and provide focused insights to target the problem and start fixing the customer service-oriented problems.
- The insights were then used for further root cause analysis to avoid its occurrence in the future.
- Created a pipeline to process future chat messages and get the required insights in an automated flow.

### Domain

eCommerce

### Technologies

#### Category-Wise Key Phrase Extraction

Anago, Pycrfsuite, CRF (Conditional Random Fields), LSTM (Type of RNN), RegEx

#### Category-Wise Topics Extraction

TF-IDF, sklearn, NLTK

#### Matching Key-Phrase and Topics

TensorFlow Hub, ELMO Embeddings, sklearn, RegEx

#### Semantic Search and Clustering

TensorFlow Hub, ELMO Embeddings, RegEx

### Key Highlights

- The accuracy level of 80% in identifying customer's problem area and classifying them.
- 20% reduction in same type complaints from customers within 3 months.

## Approach & Implementation

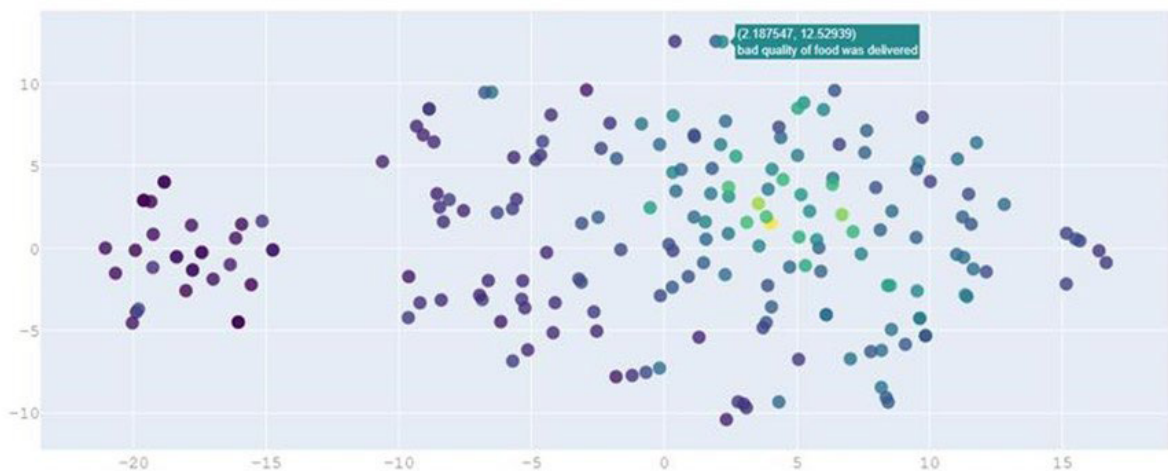
- **Text Analytics Model:** Text analytics models like ELMo were used to start processing the messages to find various patterns emerging from the chats.
- **Semantic Search:** The client provided the chat messages grouped as category and sub-categories. Semantic search was deployed to allow for a streamlined search of queries and specific results for further analysis.
- **Analytic Snapshot of Messages:** Semantic Sentence Similarities using ELMO method was deployed to cluster the similar topics in each of the 9 categories. This presented the output by clustering similar keywords as colour coded data points. The client was able to quickly view the analytic snapshot of their chat messages in a scatter plot, allowing for rapid analysis.

### Input: Collated chat messages in CSV Sheets

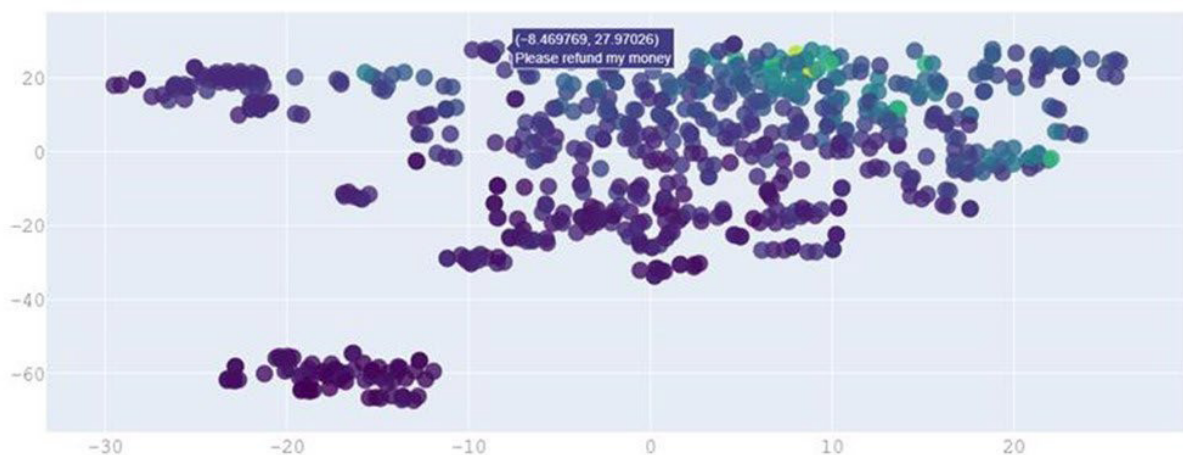
#### Output

##### Screenshots of the Clustering

Semantic Similarity for category 'I have coupon related queries for this order'



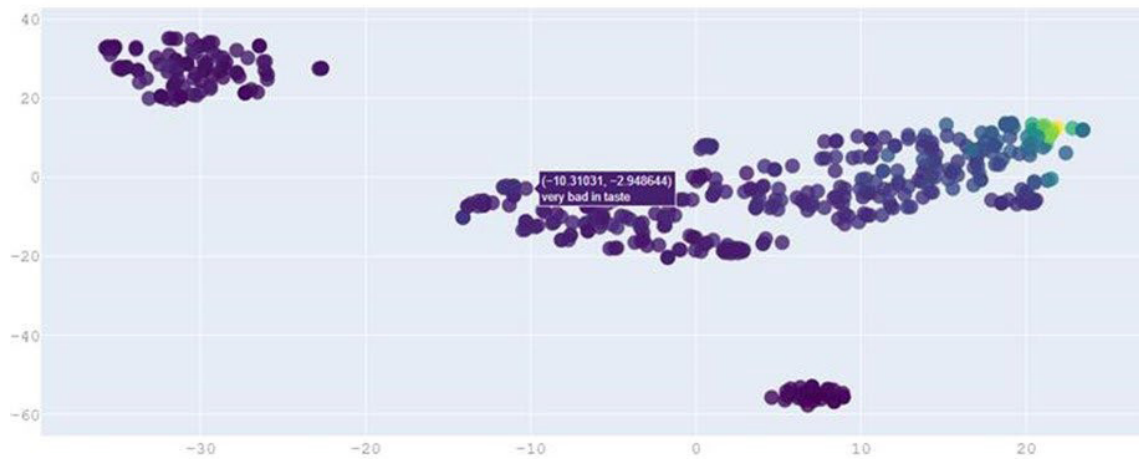
Semantic Similarity for category 'I want to cancel my order'



## Output

### Screenshots of the Clustering

Semantic Similarity for category 'I have packaging or spillage issue with this order'



## Business Impact

- A streamlined and automated process to capture important keywords from incoming chat messages and proper classification for issue redressal. The chat representative understood the chat sentiment with real-time chat insights from incoming messages.
- The accuracy level of 80% in identifying customer's problem area and accurately classifying them.
- 20% reduction in same type complaints from customers within 3 months, improving customer satisfaction.





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