**Individual Report on Project (13):** CHATBOT, Restaurant Recommendation System

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**URL of GitHub repository:** <https://github.com/louisarokiaraj/BSLVChatbot>

Project Overview

This project aims to build a dialogue system a.k.a Chatbot that could recommend or suggest restaurants to users based on their preferences. The primary motive and enthusiasm that triggered the development of this project is the fast paced research and technological outbreak happening in the world of cognitive and digital dialogue systems. Some of the key names are IBM Watson, Apple’s Siri, Amazon’s Alexa, Google Home and many more.

The Chatbot interacts through the terminal and speech inputs. The Chatbot focuses on three key factors namely user’s preferred CUISINE TYPE, LOCATION and PRICE based on the user’s conversation. Having the given values, it finds the top 3 restaurants, ordered by the ratings, and recommends the same to the user with the help of YELP API. In addition, the Chatbot does review analysis of these 3 restaurants and presents the same to the user’s suggestion. The Chatbot’s architecture is based on the following four components:

* Speech Synthesis
* Natural Language Understanding
* Dialogue Management / Natural Language Generation
* Sentimental Analysis

The project was evaluated on various metrics as follows:

* Word Error Rate for Speech Synthesis
* Accuracy of Prediction for Natural Language Understanding
* Survey collected from various user’s interaction with ChatBot
* Performance Comparison of multiple Classification Algorithm.

The team observed consistent promising performance of the chatbot in all of the above-mentioned evaluation.

My Primary Responsibility

I took up the primary responsibility of the design and implementation of Dialogue Management and Natural Language Understanding modules of the project. The goal of dialogue management (DM) is to make decisions on how the system should respond to the current user input and in addition to that, the decision must also be grounded on the semantic and pragmatic contexts of the conversation as defined by the recent dialogue history. In short they are the decision-making engines of the dialogue system (ChatBot).

I have followed a bind of two approaches for the implementation of Dialogue Management.