AI Voice Assistant ChatBot

Project Objective:

Our objective is to create a dynamic voice assistant chatbot which can create events and hold two way general conversation and event specific conversation.

Project Member:

- Alish Kadiwal
- Dhruv Modi
- Ria Chevli.

Project Summary (A)

We will develop a user friendly UI textbox which users can use for interaction with our bot using voice recognition. We are developing a voice assistant chat-bot. The bot can reply through both speech and text. Our AI chatbot will interact with the user based on general questions and likeability. We will be storing any information related to the user and based on the previous conversation, it would help our machine to search into specific information related to google and in our files. We will also utilize other libraries and packages which could help with searching for response through Google, Wikipedia, and Mathematical computations. We would also be performing OS based actions through our bot.

Progress Report:

Problem Solving (B)

In previous versions of bot, the user response was matched with the layers of string and the question had to be similar to what it expected it to be. Nowadays, the smart bot is able to detect the intent of the user based on the response and comparing it with the processed data from the trained model. It can detect the accuracy of the response and it will get the best answers stored into the database. We will be creating a robot that accurately identifies the intent of the user and provides the best possible response it could.

Data and Algorithms (C)

We have used tensor flow libraries to tokenize, creating neural networks layers and training the data. We have created a json file for training our bot based and the json object is split into tag, pattern and response. The model is detecting the response patterns and matching it with the best possible tags and generating results.

Results (D)

The results generated from the model are not fully accurate. If the pattern it tries to match is not available, it will get the response from the available data objects, definitely not the desired response. Some of the response and action do not match user intention (for example: speaking “goodbye” and bot responds to goodbye, but it doesn’t exist out of the process).

Direction we want to Explore (E)

For the remainder of the semester our focus will be making our AI Chatbot more dynamic and smart in the context of understanding what the user is asking for and outputting the information/data that the user anticipates. We will also try to expand our dataset so that our model can learn/improvise on its own. We will also focus on the GUI for AI Chatbot which we plan to do as our last task. We have not yet implemented safe fail methods for it to detect unknown responses and we need to get the response if the accuracy percent is more than some desired number.

Students Tasks/Responsibilities (F)

Uptil now, Ria Chevli and Dhruv Modi worked on the voice assistant- personal assistant part of the simple ChatBot. It usually includes the usage of various packages using the pip command. Few

examples of the packages we used are: wikipedia, pyttsx3, datetime, time,json, request etc. We use the "Sapi5" microsoft text to speech engine for the voice recognition.

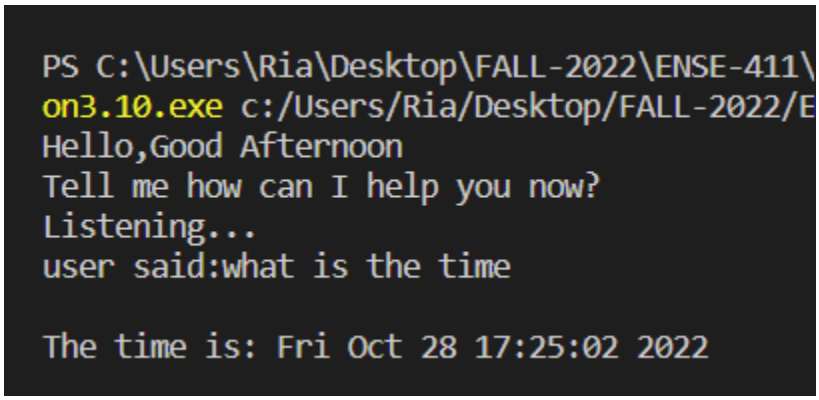
Dhruv Modi worked on -

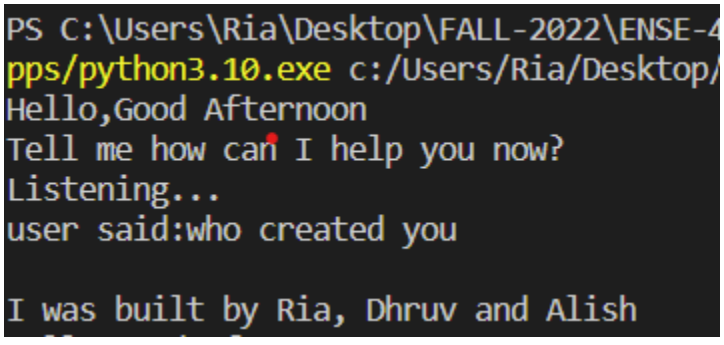
- Fetching data from wikipedia
- Accessing the web browsers
- AI answering geographical and computational question
- To log off the PC

Ria Chevli worked on -

- Predicting current time and date
- Searching data from the web
- Questions and extra features
- Weather forecast (Dhruv helped with this too)

A snippets of our chatbot when we ask the current time and general questions (Questions and extra features)





Alish Kadiwal worked on -

creating the AI model file for our chatbot to train and integrating the intent file as data to the main file. The JSON data file is read by our chatbot and it processes that information and gets the best intended result based on user response. We have used the scikit_learn package for encoding, and tensor flow library for data processing, filtering, training, encoding and decoding user response and getting the best possible response from the data file.

- Creating JSON data file for our chatbot to train
- Filtering out unnecessary symbols and characters
- Tokenizing the sentences to fix size
- Creating neural network layer
- Training the model based on the processed and filtered data
- Testing out the response and accuracy

References (G)

https://towardsdatascience.com/how-to-build-your-own-ai-personal-assistant-using-python-f57247b4494b

https://towardsdatascience.com/how-to-build-your-own-chatbot-using-deep-learning-bb41f970e281

AI-Personal-Voice-assistant-using-Python/virtual.py at master · mmirthula02/AI-Personal-Voice-assistant-using-Python (github.com)