Development of a Chatbot Using Speech Recognition using Machine Learning

CS584 Machine Learning Spring 2023 Final Project Proposal

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Problem:

A chatbot is a computer software that mimics human conversation. By answering queries and requests from users via text, voice, or both without the need for human assistance, chatbots can make it simple for users to discover the information they need. Chatbots allow live support people to handle difficult questions that require a human touch. More importantly, the user is immediately satisfied by getting an answer to their question 24X7. Hence, we use Machine Learning techniques(Natural Language Processing) to comprehend customer queries by speech recognition .

Existing System:

There are chatbots that can interpret visual data using text recognition technology and respond accordingly. These kinds of chatbots are frequently used in current applications that only accept text as input, which is a frequent characteristic. However, voice input is not supported by applications like chatgpt.

Proposed System (Project Milestones):

Dataset Preparation and Analysis:
Speech recognition chatbots use natural language processing (NLP) techniques to convert spoken input into text format, and then use machine learning algorithms to understand the meaning of the input and generate appropriate responses. These chatbots can be designed to work with a variety of input sources, such as microphones or telephones, and can support multiple languages.

Research on Machine Learning Segmentation Models: Understanding the working of different model architectures and tochoose suitable ones.

Model Training: Train Different Machine Learning architectures with different hyper-parameters and choose the best

model.Model Architectures: Tensorflow, NLTK, Speech Recognition,PyAudio, Keras, Tkinter and so on.

Dataset:

https://www.kaggle.com/datasets/elvinagammed/chatbots-intent-recognition-dataset

References:

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[2] DEWES, C., WICHMANN, A., AND FELDMANN, A. An analysis of Internet chat systems. In *Proceedings of the 2003 ACM/SIGCOMM Internet Measurement Conference (IMC'03)* (Miami, FL., USA, October 2003).

[3] GOEBEL, J., AND HOLZ, T. Rishi: Identify bot contaminated hosts by IRC nickname evaluation. In *Proceedings of the USENIX Workshop on Hot Topics in Understanding Botnets (HotBots'07)* (Cambridge, MA., USA, April 2007).

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Related Work:

[1] Using Speech Recognition and Natural Language Processing." In the paper, they describe a chatbot that uses speech recognition and natural language processing (NLP) to understand spoken language and respond with text.

[2] Shyam Kumar Gupta and Dr. Rajeev Kumar published a paper in 2019 titled "Design and Development of a Chatbot Using Speech Recognition and NLP." In the paper, they describe a chatbot that uses speech recognition and NLP to understand spoken language and respond with text.