CSCE 5290 - Natural Language Processing

Answering Query using Natural Language Processing

Project Proposal

Project Title:

Answering Queries using Natural Language Processing.

Team:

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Goals and Objectives:

- **Motivation**

Nowadays a lot of the web searches are primarily composed of queries, what this means is that people are using the internet to get answers, they expect the answer to be quick, accurate and precise. The ultimate goal of our project would be to use the available models and modify them to get answers for the questions that would be asked by the user. The answer provided would have to be precise and accurate.

- **Significance**

We would like to reduce the human interaction as it would not be possible to have a human answer the queries all the time, even if there is a human present to answer we expect that this would help in bringing down the wait times for the answers. This would be helpful in the fields of healthcare, IT consultancy and Logistics Department.

- **Objectives**

The primary objective of the project is to answer the queries that the user inputs. The Hugging Face Transformers library would be used and we would modify the BERT model to answer the queries. Modifications that would be made to the present models are tricky but can be done to fit our needs.

- **Features**

We can use the Conversational Question Answering Dataset Systems model to build the project. The idea here would be to predict the accuracy of the queries answered by the systems when the

input is provided and a set of questions are set to be addressed. All the conversions in this dataset would be recorded by pairing two crowd workers who would engage in conversational inquiries and exchange a text in the form of questions and answers. This would form the base of the project and we will utilize the story, the input text from the query, and the response from the JSON dataset to generate the features for the data frame.

References:

- P. Dwivedi, "NLP - building a question answering model," Medium, 11-Jul-2018. https://towardsdatascience.com/nlp-building-a-question-answering-model-ed0529a68c54.
- J. Ni, T. Young, V. Pandelea, F. Xue, V. Adiga, and E. Cambria, "Recent Advances in Deep Learning Based Dialogue Systems: A Systematic Survey," CoRR, vol. abs/2105.04387, 2021. https://arxiv.org/abs/2105.04387
- Y. Liu et al., "RoBERTa: A Robustly Optimized BERT Pretraining Approach," CoRR, vol.abs/1907.11692, 2019. http://arxiv.org/abs/1907.11692

Github

https://github.com/praneethk6795/Answering-Queries-using-Natural-Language-Processing.