CS 410 Project Proposal

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Sentiment analysis of restaurant reviews

The main objective of this project is to understand the text associated with restaurant reviews and determine whether certain reviews are positive, negative, or neutral.

This is an interesting topic because during (and now, after) the COVID-19 pandemic, surviving restaurants had to change their service approach by offering not only more delivery options but also by becoming increasingly creative, including experiences their customers might appreciate. Additionally, with macroeconomic factors playing a part on the price of goods and services, reviews might include wording that can help restaurants tailor their offerings to the right customers.

The dataset from Yelp will be cleaned of special characters, split into a bag-of-words representation and vectorized. A successful analysis will include the restaurant, review, and binary grade to signify positive versus negative.

Tools

The main tools and frameworks intended to be used for this project are TensorFlow, PyTorch, and NLTK (Natural Language Toolkit).

Team

I will be the sole member of the team, but the expectation is that with all of the work to analyze, clean, massage, and use the data, then to analyze again, write, and train models, this will take over twenty-five hours.

References

[1] Yelp dataset. https://www.yelp.com/dataset

[2] Restaurant Reviews: Sentiment Analysis and Recommendation. https://medium.com/analytics-vidhya/restaurant-reviews-sentiment-analysis-and-reccomendation-9bdf31a0b20

[3] Review Analysis Model Based on ML Algorithms. https://www.analyticsvidhya.com/blog/2022/02/restaurant-reviews-analysis-model-based-on-ml-algorithms/

[4] Sentiment Analysis of Restaurant Review with Classification Approach in the Decision Tree-J48 Algorithm. https://ieeexplore.ieee.org/document/8884282