**COSC 6590 Application Development with Large Language Models**

Homework Assignment 1

Due Wednesday

1. Using OpenAI, and any LLM model within that, complete all the exercise in notebooks I2, I3, and I4. Submit the notebooks with answers to Canvas.
2. Using Groq API, and using  llama3-70b-8192 model, complete all the exercise in notebooks I2, I3, and I4. Submit the notebooks with answers to Canvas.

Note: Understand what you are doing in each of the exercises and not do it sort of mechanically.

1. Use aisle-Mapping.ipynb to do the following.

* Test it on Llma or GPT models to make sure it works and outputs the answers for 50 items in the dataset.
* Make sure that the datafile is uploaded to the toplevel folder of Colab otherwise you may have to specify the path for the datafile.
* Choose two comparable models like llama70b and gpt3.5-turbo or llama8b and Mixtal 7b. Note that you may have to tweak the prompt to get it running right. Some experimentation may be involved.
* Adjust the output of the model 1 to JSON.
* Then design a suitable prompt to validate each (key,value) pair by the second model. Validation means asking the LLM whether a specific (key,value) pair in the JSON object is correct, where the key is the grocery item and value is the aisle category. It will take some iterations to get the prompt right. Remember you have teach the LLM like a child.
* Once you finish, make observations based on the validation in terms of how many were validated right and how many were not.

Submit all notebooks with output and observations.