EE P 5OO D: LLMs and ChatGPT || Assignment 0: Pre-Course Setup

Dr. Karthik Mohan

Univ. of Washington, Seattle

November 4, 2023

Assignment 0: Pre-Course Setup (70 Points)

Hey everyone - Welcome to the short course on LLMs! In order to make sure that we make the most out of the short duration course, I am sharing an Assignment 0 that can help you get to speed with the upcoming short course. Please **finish the assignment by Saturday night, November 11**, so you are well set for the short course, which will be moving at a fast pace. **Submit a single pdf that contains screen shot and code for 1, your paragraph summaries for 3, screenshot for 2 and 4 and link to demo for 5 and 6** on the assignment submission page on canvas. To get credit for question 4, share screen shots of 5 different search terms and their corresponding results on the streamlit page.

Assignment 0: Pre-Course Setup (70 Points)

1. **(10 Points) Colab Notebook:** Ensure that your Colab notebook is setup and running. Visit this link Write a code block as function in your colab notebook that given a word can find 3 nearest words to the input word from a list of words. Use the following words to return results from: Flower, Car, Tree, Mountain, Building (Hint: You can use any word embedding to get this task done along with cosine similarity and sorting results). For example: If input is "Rose", ideally your first nearest word should be "flower".
2. **(10 Points) ChatGPT API:** Set up your access to ChatGPT 3.5 or ChatGPT 4 API. This will be a pre-requisite before we start class next Saturday morning.
3. **(20 Points) Prep Lecture Videos:** Go through Lectures 14,16,17 on this page to refresh your understanding of Deep Learning Models and Transformers. Summarize your understanding of the material through one or two paragraphs each for each Lecture.

Assignment 0: Pre-Course Setup (70 Points)

4. **(10 Points) Streamlit Setup:** Setup Streamlit on your local machine (laptop). Go through an easy tutorial on streamlit.
5. **(20 Points) Streamlit Demo** Create a local webpage in Streamlit. Your webpage should have a search bar that takes in any word as input and returns the closest image to the input word as output (from 5 fixed images you can download on the web - The 5 images you download should be connected to the five categories - Flower (e.g. rose), Vehicles (e.g. Tesla), Trees (e.g. Pine), Mountains (e.g. Mount Rainier) and Buildings (e.g. Paul Allen Center). You can re-use the search logic from question 1 - Except that words are replaced with images. Here's an example demo with images replaced with words.
6. **(10 Points) Streamlit Demo (Bonus)** Host your webpage from previous step on public domain and include a link to it in your submission.