Master of Science – Biomedical Engineering, Thesis Proposal

Language Model Approach for Analyzing Medical Information in a VR Environment for Colorectal Surgery

The digital age, patients frequently turn to the internet to gather information about their medical conditions, including potential surgical interventions. Unfortunately, many websites provide false or misleading information, posing significant risks to patients. It's crucial for patients to carefully analyze the quality of the websites they use and verify the accuracy of the information they find before making any health-related decisions.

The goal of this project is to utilize Large Language Models (LLMs) that can accurately rank information found on websites providing medical information. These models will be trained on datasets of medical texts to ensure effectiveness and fine-tuned with ranks labeled by physicians. Furthermore, this project aims to integrate the fine-tuned LLM into a Virtual Reality (VR) environment, allowing users to interact with the LLM through natural speech. This will enable patients to access accurate medical information interactively and immersively, improving their ability to make informed decisions about their health.
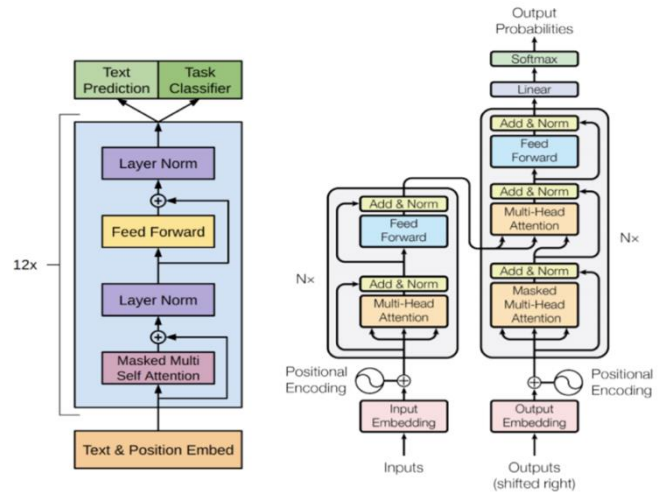
Nature of the Thesis
Programming: 80%, Documentation: 20%

Specific Requirements
- Experience in machine learning
- Good programming skills (especially Python)
- Familiarity with VR development platforms (e.g., Unity)
- Experience with speech-to-text (STT) and text-to-speech (TTS)

Scientific Collaborators
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