

## Final Semester Project

### I. Introduction

- Recently, ChatGPT, with its powerful Natural Language Processing capabilities, has become a prevalent and helpful tool, widely applied in various fields. The underlying architecture of ChatGPT is Transformer - an architecture that has brought breakthroughs in the field of Natural Language Processing in recent years. The self-attention mechanism in Transformer enables the model to achieve superior accuracy and speed compared to previous architectures.
- In this project, students will explore and build a practical application based on the Transformer architecture model.

### II. Requirement

- Firstly, students will select a problem in Natural Language Processing to address. Some suggested problem options could include the following:
  - Part of Speech (PoS) Tagging.
  - Text Classification.
  - Named Entity Recognition.
  - Machine Translation.
  - Text Summarization.
  - Question Answering.
  - ...
- After that, students will proceed to choose a Transformer-based model to solve the given problem and sequentially fulfill the following two requirements:
  - 1) (7 pts) Find a suitable dataset and retrain the model on that dataset. Afterward, students need to evaluate the model using appropriate metrics. The report should include a detailed description of the dataset, the model used, the data

split (train/validation/test), and the evaluation results using appropriate metrics.

2) (3 pts) Build a web-based application based on the trained model.

### **III. Submission Guideline**

- Students must submit the complete source code, model weights, training data, and the report.
- If the data to be submitted is too large, students can upload the data to a drive and submit the corresponding link.