

# Introduction to Artificial Intelligence

## Final Project Proposal

team 27

### **Problem Statement and Task Definition**

NYCU is quite big, new students may not be familiar with it when they study at first, but the map is too complicated to understand completely. Therefore, the task is to make a LLM which can generate text adventure game in NYCU, to help students know the position of different places.

### **Description of the challenges**

There is no training data on the Internet, so we need to generate data on our own. But we can ask ChatGPT to generate some instructions and the answers of these instructions. In order to reply currently, we decided to use “ollama” which can run LLM locally and easily.

### **Input/Output Behavior with Concrete Examples**

input 1: 我是一位新生，對於交大還不熟悉，長相普通，沒有特殊能力。現在遊戲開始

output 1: 你現在站在國立陽明交通大學的校門口，前面是竹湖，左邊是一條長長的路，右邊是第三招待所，請輸入接下來你會怎麼做。

input 2: 向前走

output 2: 你選擇向前走。現在你走到了浩然圖書資訊中心，左邊是第一餐廳，右邊是工程三館，請輸入接下來你會怎麼做。

input 3: 進去餐廳吃飯

output 3: 你走進餐廳吃飯。你點了一份排骨便當，細嚼慢嚥的吃完，體力增加 10，請輸入接下來你會怎麼做。

## **Related works**

<https://medium.com/building-the-metaverse/creating-a-text-adventure-game-with-chatg-cffeff4d7cfd>

First, we input some conditions, and ChatGPT will output a new condition related to the previous condition and some actions we can choose. Repeat this until ChatGPT says you are dead or the game is over.

## **Methodology**

The training data from ChatGPT may have some mistakes and don't contain the information about NYCU, so we need to modify some parts to fit our requirements. About fine-tune the LLM, we will use the "adapter" method rather than the traditional fine-tune method that changes every parameter in the model, because adapter only change the parameters in the additional layer which contains less parameters than LLM. Therefore, it can spend less time on training.

## **Evaluation Metrics**

evaluation the model by following points:

- fluency: whether can generate no grammar error sentences
- accuracy: whether can generate correct relative position of realistic places
- relevance: whether can generate reply according to inputs of user

## **Baselines**

- the model can respond in Chinese fluently and correctly.
- the model can be a simple text adventure game generator, when user inputs an action, it can react to the input and create the next condition.

## **Work Plan**

### **Time schedule**

1. discuss theme and objective
2. build the development environment
3. search the information
4. prepare the training data, adjust the training data
5. training model
6. link the model to actual application

### **Discussion**

[https://hackmd.io/GQyGMlx9SL2ShL60X\\_b0JA](https://hackmd.io/GQyGMlx9SL2ShL60X_b0JA)

### **Repo**

<https://github.com/111611-038/AI-final-project>