School of Advanced Technology

Final Year Project

Project Specification Report

Project Title: ChatGPT-based essay grading assistant system

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Project field: Software development

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Co-supervisor (if applicable):

1- Project Description and Problem Statement

In the contemporary university education, educators grapple with the time-consuming task of reviewing and grading a plethora of student essays. With the advancement of the NLP technology, there are some tools like ChatGPT[1] can be used in the process of the text.

The primary goal of this project is to develop a web application built on the capabilities of ChatGPT[1] to use the AI to help the teacher grade the essay. The system will be capable of checking the grammar, assessing the content automatically and concluding the central ideas of some sections. The system will help the teacher to do the most basic work which might

be dull but indispensable when they want to assess an essay of the student, so this project will greatly reduce the teacher's pressure of assessment and grading.
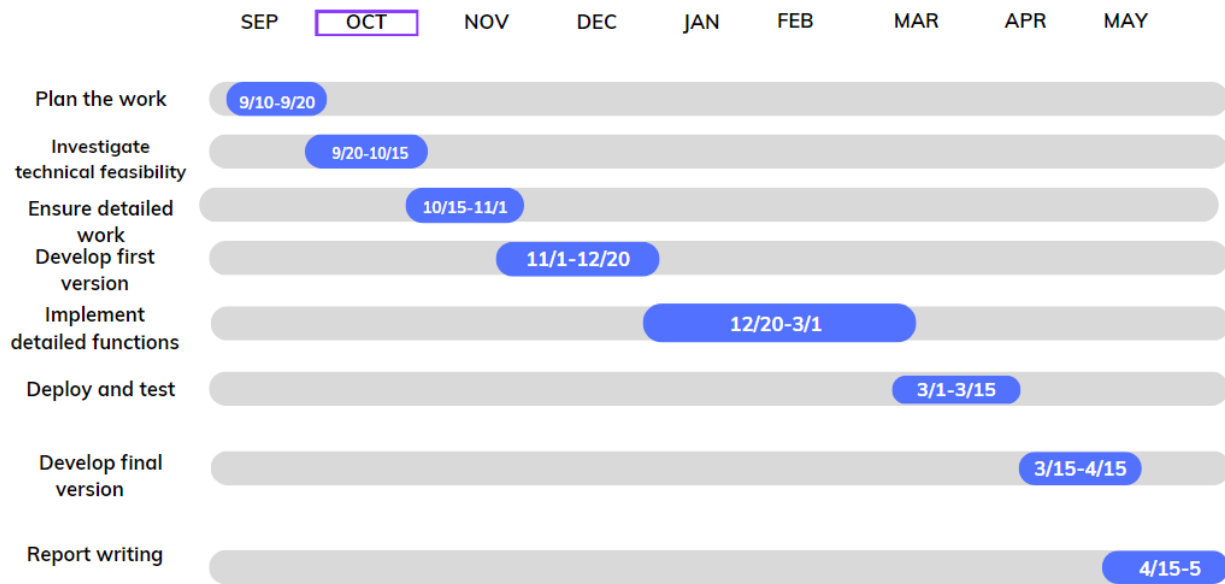
2- Aims and Objectives

The project should implement the functions of a grading help system, which can let the user to upload the essay document (PDF or DOCX), and reading the document on the browser. After uploading the essay, the user can choose to let the AI help grade it (or not), the AI will grade and conclude the essay preliminarily. The AI might split the essay into serval sections such as introduction, implementation, conclusion and evaluate the writing quality of every sections. Different sections should have different grading emphasis and criteria, which should be pre-set in the program.

The project is planned to written in NodeJS and the final result might be a website which can be really used by users. It is extremely complex to develop an AI system start from the very beginning, so the OpenAI API[2] will be used to support the grading system. All the grading request should be processed by OpenAI API[2], and the grading results are also generated and sent as the response messages by this API. However, the prompt parameters should be set by the programmer or maybe input by the users.

3- Project Plan: Tasks and Milestones (Gantt Chart)

GANTT CHART

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY

Plan the work — 9/10-9/20

Investigate technical feasibility — 9/20-10/15

Ensure detailed work — 10/15-11/1

Develop first version — 11/1-12/20

Implement detailed functions — 12/20-3/1

Deploy and test — 3/1-3/15

Develop final version — 3/15-4/15

Report writing — 4/15-5

The initial plan of this project is shown below, which includes the steps such as planning, investigating related work(websites or tools), developing and improving. The practical process might be changed according to the real development progress.

4- Project Deliverables

This project will ultimately be presented in the form of a website. This website will have a complete interface where users can upload PDF and Word files, allowing them to directly experience the AI-assisted grading and article evaluation functions.

5- Project Industrial Relevance

In today's rapidly evolving world, the advancement of natural language processing technology presents new opportunities and solutions for various industries. One project with wide-ranging potential relevance is the ChatGPT-based essay grading assistant system. This project is closely related to the needs of different sectors, offering practical applications for them.

First and foremost, the education industry stands out as a significant beneficiary. The education sector frequently encounters the task of grading large volumes of essays and assignments. The ChatGPT-based assistant system can significantly reduce the time and effort required for grading, thereby enhancing grading efficiency. This project is a research

and experimentation into AI-assisted writing correction. The completion of this project's AI-assisted writing grading application suggests that more advanced similar software may be used by various universities or primary and secondary schools. This has a significant impact on the entire education industry and providers of AI writing grading services. Furthermore, the scalability of this technology allows it to meet the grading demands of online education platforms and massive open online courses.

Another industry that can benefit from this system is the publishing industry. Publishers can utilize the assistant to assess the quality of manuscripts and written content for books, journals, and articles. It can also assist editors in proofreading, identifying style issues, and suggesting improvements, thus improving the overall quality of published materials. In the realm of human resources and recruitment, companies often receive a plethora of job applications with accompanying cover letters and essays. Here, the ChatGPT-based assistant can help HR professionals efficiently screen and evaluate these documents, aiding in the selection of suitable candidates. Additionally, it can assess candidates' writing skills, which is crucial for roles that require effective communication.

References

[1] ChatGPT [Online], https://chat.openai.com/, Oct.18

[2] OpenAI API [Online], https://platform.openai.com/, Oct.18