AI Text Completion Project Report

This project aimed to build and experiment with a simple text completion application using a generative AI model. The goal was to understand how AI processes prompts to generate coherent and relevant text, explore how different settings affect the output, and evaluate the model's strengths and limitations. Using the OpenAI API, I developed a Python script that takes user input prompts and returns AI-generated completions. Throughout the project, I tested a variety of prompts to analyze the quality and relevance of the responses.

For this project, I tested the AI text completion app with five different prompts: "Write a poem about the moon," "Once upon a time there was a robot who...," "Explain recursion like I'm 5," "The UCF Knights are...," and "The world worries me because..." Each response was relevant and coherent, showing that the model can understand and follow a variety of topics well. For example, the poem was creative and expressive, while the explanation of recursion was simple and easy to understand for a young audience. However, in some cases, like the prompt about "The best president is...," the model gave a very neutral and vague answer, which shows it tends to avoid taking a clear position on subjective or controversial topics. I didn't notice any clear factual mistakes, but since the model's knowledge isn't always up to date, there could be inaccuracies on current or very specific subjects. I also experimented with changing the settings like temperature and max tokens. Higher temperature made the responses more creative but sometimes less focused, while lower temperature gave shorter and more straightforward answers. Overall, the AI performs well on creative writing, general knowledge, and explaining simple concepts. It struggles more with tasks that require logical reasoning or deep knowledge of niche topics. To make the app better, it would be helpful to add filters for inappropriate content and a way to check facts, so the information is more reliable. This project showed how powerful generative AI can be, but it also highlighted the need to be careful about its limitations.

In conclusion, this project provided valuable hands-on experience with generative AI and revealed both the impressive capabilities and current challenges of text completion models. While the AI can generate creative and useful content quickly, users should be aware of its tendency to avoid controversial opinions and the potential for outdated or incorrect information. Future improvements to the application could include better input validation, user controls for creativity, and mechanisms to verify facts. Overall, this project deepened my understanding of AI prompt engineering and model behavior, which will be useful for future AI-related work.