# AI Text Completion Capstone Project Report

Date: June 19, 2025

Aiden Miller

## Overview

This project involved building and evaluating a simple Python-based text completion application using OpenAI’s GPT-3.5 model. The application takes user input, sends it to the OpenAI API, and returns a generated response. It includes input validation, user-adjustable temperature settings, and support for repeated prompts in one session.

## Experimentation

The following prompts were tested with the application, and the responses were recorded and evaluated.

### Prompt 1

Prompt: Write a haiku about the ocean.

Response:  
Boundless depths below  
Whispers of waves ebb and flow  
Mystery untold

### Prompt 2

Prompt: Explain photosynthesis like I’m 10.

Response:  
Photosynthesis is how plants make their own food. They use sunlight, water, and carbon dioxide from the air to create sugar and oxygen. The sunlight gives them energy to do this process. Plants then use the sugar as food to help them grow and stay healthy. And they release the oxygen into the air for us to breathe. So, photosynthesis is like a plant's way of cooking up its own yummy meal and giving us fresh air to breathe.

### Prompt 3

Prompt: Summarize the plot of The Grand Budapest Hotel.

\*\*Response:\*\*  
"The Grand Budapest Hotel" follows the adventures of a legendary concierge named Gustave H. and his loyal lobby boy Zero Moustafa at the luxurious Grand Budapest Hotel in the fictional European country of Zubrowka. The story unfolds as they become embroiled in a series of misadventures and mishaps, including a valuable painting being stolen, a murder mystery, and a war breaking out. Amidst all the chaos, Gustave and Zero form a close bond and work together to clear...

### Prompt 4

Prompt: Continue this story: “It was a stormy night, and the power went out…”

Response:  
Leaving Sarah alone in her dark and quiet apartment. She fumbled around in the darkness, trying to find a flashlight or a candle to light up the room. The wind howled outside, making the walls creak and the windows rattle.  
  
Suddenly, she heard a loud crash coming from the living room. Her heart raced as she tiptoed towards the source of the noise. As she entered the room, she saw that a large tree branch had crashed through the window, sending glass shards...

### Prompt 5

Prompt: List 3 pros and cons of AI in education.

Response:  
Pros:  
1. Personalized learning: AI can adapt to the individual learning needs and styles of students, providing personalized education experiences.  
2. Increased efficiency: AI can automate administrative tasks, grading, and other repetitive tasks, freeing up teachers to focus on more meaningful interactions with students.  
3. Expanded access to education: AI can provide educational resources and support to students in remote or underserved areas, increasing access to quality education for all.  
  
Cons:  
1. Privacy concerns: AI in education may collect and...

## Evaluation and Reflection

The model performed well on creative, informative, and instructional prompts. It produced coherent and relevant answers that showed contextual awareness. Short-form tasks like haikus and explanations were especially strong. The main limitation observed was minor truncation or incomplete conclusions on long-form prompts, like the story and summary. Overall, GPT-3.5 provided reliable and high-quality completions across varied use cases.

Potential improvements to the application include adding retry logic, streaming responses for long outputs, or integrating filters to detect bias or hallucination. The experiment demonstrated both the power and practical boundaries of today’s generative AI systems.