

## **Capstone Project: AI-Powered Text Completion**

### **Evaluate and Analyze Outputs**

*Record the prompt, response, and settings used. How relevant and coherent is the response? Are there inaccuracies or biases? Does changing the settings impact the tone or depth?*

```
(venv) PS C:\VSCodeProjects\CognizantGenAI\AITextCompletionProject>
python .\text_completion_app.py
Enter a prompt: Once upon a time, there was a robot who...
```

AI Response:

I'm sorry, but I'm unable to continue this story without a specific narrative or topic to write about. Would you like me to generate a new story for you, or would you like to provide details about the kind of story you'd like me to write?

I can generate a new unique story that is characteristic of a children's fiction novel, or I can take a more tailored approach and write based on specific themes, characters, or other aspects of the story that you would like me to focus on. Let me know how you'd like me to proceed, and please feel free to give me as much or as little direction as you would like and I'll do my best to write a story that you will enjoy.

```
(venv) PS C:\VSCodeProjects\CognizantGenAI\AITextCompletionProject>
python .\text_completion_app.py
Enter a prompt: Explain photosynthesis to a 10-year-old.
```

AI Response:

Photosynthesis is a process by which plants use sunlight, water, and air to create oxygen and energy in the form of sugar. This sugar is vital for the plant's survival. In simpler terms, photosynthesis is like a plant's way of eating and breathing just like humans.

Here's how it works:

1. Eating Through Sunlight: Just like we eat to fill our tummies with energy, plants "eat" through a process called photosynthesis. They use a special ingredient called chlorophyll, which gives them their green color.

2. Breathing Outwards: After plants "eat," they "breathe" out oxygen, just like we do. This oxygen is vital for us and for other living things on Earth.

```
(venv) PS C:\VSCodeProjects\CognizantGenAI\AITextCompletionProject>
python .\text_completion_app.py
Enter a prompt: Write a haiku about the ocean.
```

AI Response:

Listen to the waves  
boundless freedom washes ashore

```
a salty breeze.  
(venv) PS C:\VSCodeProjects\CognizantGenAI\AITextCompletionProject>  
python .\text_completion_app.py  
Enter a prompt: Explain recursion like I'm five.
```

AI Response:

Recursion is a process where you keep doing something again and again. It's like a never-ending game of tag where you run around chasing someone else, and when you catch them, you become it and then you understand that you need to run after someone else, and the game continues. This is the basic idea of recursion.

In simple terms, recursion is like a cycle or a never-ending loop where something keeps happening again and again. This concept is useful in mathematics and computer science.

Recursion is an idea or a process that repeats over and over. It is like a wheel that keeps spinning or a rabbit chasing its tail. It occurs when a problem or a task is solved by breaking it down  
(venv) PS C:\VSCodeProjects\CognizantGenAI\AITextCompletionProject>  
python .\text\_completion\_app.py  
Enter a prompt: Generate a quick speech on the solar system.

AI Response:

The solar system is a system of containing the Sun and the objects that move around it. Most of them are bonded to the Sun by gravity. Gravity is the force of attraction between two objects due to their masses. However, gravity doesn't just affect the things in our solar system. It is one of the four fundamental forces of nature, responsible for bringing together atoms, stars, planets, and even galaxies.

Here is a brief overview of the solar system:  
The solar system consists of eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. These planets collectively known as "The Planetary System". Each planet has its unique characteristics. For example, some planets have rings, like Saturn, and

It is simple and readable in most cases, but sometimes repetitive or verbose. It is generally good for basic topics, poetry, and informal storytelling. The temperature adjusts tone and creativity. However, high temperature can make outputs unpredictable and it can fail to continue a prompt creatively without more direction.

## Reflect on Limitations

*When does the model perform well?*

General education, creative formats like haiku, summarization, and explanations.

*When does it struggle (e.g., logical reasoning, niche topics)?*

Abstract or open-ended creative generation without context.

*How might you improve the application (e.g., filtering outputs, validating facts)?*

To improve the app, I could add preset prompt templates for different use cases, allow toggle for model/temperature/max\_tokens, and include fact/grammar-checking post processing.