

Part 3: Experimentation and Evaluation

For this Capstone Project of AI Powered Text Completion, I used the Cohere command-r model. I carried out the code in a Jupyter notebook. I used libraries such as cohere and python-dotenv.

Part1

I used default parameters of temperature=0.7 and max_tokens=150, hence all the responses to the prompts seemed remarkable.

- 1) Prompt: Once upon a time, there was a robot who...

 Response:

...who was built by a brilliant team of engineers. These engineers worked tirelessly day and night, tweaking and adjusting every detail of the robot's design, determined to create something special.

They named him R5-MARK2, a sleek and shiny robot with an intricate network of wires and gears powering its every movement. R5-MARK2 was no ordinary robot; it had artificial intelligence far beyond any other of its kind. Its creators wanted it to experience the world, to think and react like a human, and perhaps, just perhaps, develop emotions.

Curious and wide-eyed, R5-MARK2 explored the world around it, taking in every sight and sound. It watched the people around it, the way they

- 2) Prompt: Explain photosynthesis to a 10-year-old.

 Response:

Hey there! Photosynthesis is a super cool process that plants, and some other cool creatures like algae and some bacteria, use to make their own food.

You know how we go to the grocery store and buy food? Well, plants and these other guys don't have pockets or wallets, so they make their own delicious meals using sunlight! They use the energy from the sun's rays, some water from the soil or ocean, and special gases in the air to create tasty treats like glucose. This process is called photosynthesis, which means 'putting together with light'.

Plants use their special leaves, which often are green because of a color called chlorophyll, to capture the sunlight. They mix the light energy with water and carbon

3) Prompt: Write a haiku about the ocean



Response:

The vast ocean deep,
An endless blue expanse, its
Mysterious realm.

PART 2

For this part, I explored changing parameters such as temperature, max_tokens for different prompts.

1) Temperature: 0.9, max_tokens: 100

Prompt: Explain recursion like I'm five.



Response:

Recursion is like a game of pretend that keeps on going and going. Imagine you have a magical toy that can make exact copies of itself. When you play with it, you not only have one toy, but two! And the new toy can make another copy of itself, giving you three toys in total. It's like a never-ending game of making more toys. Now, picture doing this with something simple, like drawing a circle. You draw a circle, and it's

Since the temperature was set pretty high (0.9) for this prompt, the response was creative although incomplete and cut off mid way. The use of a “magical toy” metaphor is effective and child-friendly. This response has no biases and inaccuracies maybe because it's directed to a child.

2) Temperature: 0.5, max_tokens: 50

Prompt:

summarize text. Using containers, Docker makes it simple to design, deploy, and operate programs. Think of a container like a software shipping box—it holds files and programs so apps can move quickly from developer to user. One key

advantage is letting developers bundle their app with all dependencies needed to run on any Linux distro, eliminating the need to install each requirement manually.

 *Response:*

Docker uses containers to simplify the design, deployment, and operation of programs. Containers are like shipping boxes for software, keeping files and programs together. This allows developers to package their apps with all the necessary dependencies, making them easily transferable and compatible across different

The response is concise and well-structured. It keeps the core idea of Docker and the concept of containers. There are no biases and inaccuracies observed in this response. Usage of “Shipping boxes” is consistent with how it is used in professional terms. Token limit forced the model to give a focused response.

3) Temperature: 1.0, max_tokens: 200

Prompt: Explain to me the 9/11 tragedy.

 *Response:*

Certainly, the events of September 11th, 2001, often referred to as 9/11, were a series of coordinated terrorist attacks that took place in the United States. The attacks killed 2,977 non-hijackers, injured over 6,000 others, and caused massive physical and economic damage. They remain the deadliest terrorist attacks in human history.

Here's a chronological breakdown of the events:

1. First Plane Crash: American Airlines Flight 11. A Boeing 767 with 92 people on board departed Boston's Logan International Airport headed for Los Angeles. It was hijacked by five terrorists affiliated with the Islamic extremist group al-Qaeda. The plane crashed into the North Tower of the World Trade Center complex in New York City at 8:46 a.m. ET.

2. Second Plane Crash: United Airlines Flight 175. Another Boeing 767,

The response is very factual, chronological, and emotionally aware. It's structured well, although it stops abruptly after the second event. There are no biases in this response, the tone is very neutral and respectful. Although the temperature was set high, it was only narrative but did not stray into inaccuracy.

4) Temperature: 0.2, max_tokens: 110

Prompt: Finish the prompt. I think I want to...



Response:

...go on vacation!

You've worked hard and now it's time to treat yourself to a well-deserved break.

Pack your bags, grab your passport, and embark on an adventure. Whether you're seeking sunny beaches, majestic mountains, or vibrant city lights, the world is your oyster. Let the planning begin!

Where would you like to go on vacation? Do you have any destinations in mind?

The response was very coherent and generic. Suggests vacation as a relatable, safe idea. Although it assumes that I want to travel, I see no problematic biases. Since temperature is low, it provided a predictable and casual response.

5) Temperature: 0.6, max_tokens: 150

Prompt: give me the python code for a fibonacci series



Response:

Here's a Python program that generates the Fibonacci series up to the 10th term:

def fibonacci_series(n):

series = []

a, b = 0, 1

for _ in range(n):

series.append(a)

a, b = b, a + b

return series

Generate Fibonacci series up to the 10th term

fib_series = fibonacci_series(10)

print(fib_series)

You can change the value of `n` in the `fibonacci_series` function to generate the series up to a different number of terms. The Fibonacci series starts with 0 and

The response provides correct and clean Python code along with comments. Although no biases, the only inaccuracy that can be observed is the last statement is incomplete. The medium temperature ensures clear explanation and technicality.

What went well: Overall, I think the Cohere command-r does remarkably well be it story telling, instructional or even news stories. It was appropriate with the given temperatures but didn't lose relevance/coherence when dealing with higher temperatures as well.

Limitations & Suggestions: I think in most responses it was getting cut off at the end due to unfinished thoughts when dealing with higher temperatures. I believe the model doesn't remember past prompts which could be improved. A suggestions may include completing responses by detecting and retrying if the response is cut mid sentence.