

Q1: Text Generation Application Report

1. Introduction

In this project, I worked on creating a simple text generation application using the GPT-2 model. The goal was to generate text based on prompts related to the Sustainable Development Goals (SDGs). The idea was to see how well the model could continue sentences I started.

2. Model Selection and Implementation

I chose the GPT-2 model because it's a popular model for generating text, and it was easy to find and use with the Hugging Face transformers library. I set up a basic interface where users can type a prompt, and the model generates the rest of the sentence.

3. Prompts and Results

- **Prompt 1:** *"Eradicating poverty in all its forms remains one of the greatest challenges facing humanity. By 2030, the aim is to"*
 - **Generated Result 1:** *"Eradicating poverty in all its forms remains one of the greatest challenges facing humanity. By 2030, the aim is to develop the world's poorest nations. The world's poorest countries are under extreme pressure, with world debt at more than \$25 trillion, nearly two times the size of the United States, according to the World Bank."*
- **Prompt 2:** *"Achieving food security and improved nutrition is essential. The key to ending hunger lies in"*
 - **Generated Result 2:** *"Achieving food security and improved nutrition is essential. The key to ending hunger lies in building a sustainable food system. The United Nations has been called the 'Food Security Initiative' because of its commitment to feed the world with food. The United Nations has set up a Food Security Council, which is responsible for developing and implementing the Agenda 21 Sustainable Development Goals. One of the key goals of the international food security initiative is to ensure that the world's poorest people have access to adequate food."*
- **Prompt 3:** *"Ensuring healthy lives and promoting well-being for all at all ages requires"*
 - **Generated Result 3:** *"Ensuring healthy lives and promoting well-being for all at all ages requires not only a commitment to the common good, but also a commitment to the common good of all people. In the case of the current"*

crisis, the situation is even more dire. The nation's health-care system is in trouble. Last month, the Centers for Medicare and Medicaid Services reported that the healthcare system's costs increased by 14.7 percent from the year before. The country's"

- **Prompt 4:** *"Djibouti is a small country located in"*
 - **Generated Result 4:** *"Djibouti is a small country located in the southern part of Bangladesh. It is almost 50% Muslim. It is home to several villages belonging to various religious sects and the majority of the people are Sunni Muslims. It is also home to most of the country's religious minorities, which include Shia Muslims, Hindus, Zoroastrians, and Buddhists. The country's population is estimated to be over 60 million. The Islamic State group is a terrorist group."*

4. Observations

After testing the model with these prompts, I noticed some issues:

- **Accuracy:** The generated text often included wrong information, like saying Djibouti is in Bangladesh.
- **Relevance:** Sometimes the text wasn't really related to the original prompt, especially with the third and fourth examples.
- **Grammar:** The sentences were mostly grammatically correct, but the content didn't always make sense.

5. Conclusion

In conclusion, while the GPT-2 model can generate text that looks good at first glance, it often produces content that isn't accurate or relevant. To improve this, I might need to train the model more on specific data or try different models that might be better suited for this kind of task.