

LLM_Assignment_1 Project

I. Introduction

Climate change refers to long-term alterations in the average weather patterns that define Earth's local, regional, and global climates. These changes, driven by both natural processes and human activities, have profound implications for ecosystems, human health, and the global economy.

II. Project Explanation

This project aims to develop a sentiment analysis tool that detects and analyzes public opinions related to climate change, specifically aligned with **Sustainable Development Goal (SDG) 13: Climate Action**. In this project, I aimed to finetune a **DistilBERT** Model to make it more proficient in classifying sentiments within economic texts.

III. Model Selection

Research and Setup: The Hugging Face library offers a variety of pre-trained models that are well-suited for sentiment analysis.

DistilBERT was selected due to its efficiency and strong performance in understanding context, which is critical for analyzing climate-related discussions.

IV. Data Collection

Data Source: The dataset for this project was collected from [Kaggle]. The data consists of climate change-related.

V. Model Implementation

- **Loading the Model:** The DistilBERT model was loaded from the Hugging Face model hub using the `'transformers'` library. The tokenizer associated with DistilBERT was also loaded to preprocess the text data.
- **Sentiment Analysis Implementation:** The sentiment analysis was implemented using the pre-trained DistilBERT model. A function was created to classify the sentiment of each text entry as positive, negative, or neutral.

Fine-Tuning

- **Dataset Preparation for Fine-Tuning:** A labeled dataset was created to fine-tune the DistilBERT model for better accuracy in sentiment detection.
- **Fine-Tuning Process:** The fine-tuning process involved training the model on the labeled dataset for a specified number of epochs, adjusting the learning rate, and monitoring performance using validation data.

References

- Department of Economic and Social Affairs Sustainable Development
- Hugging Face.