**Tweet Emotion Detection using Hugging Face Transformers**

**Overview**

This project involves creating a **custom Multi-Layer Perceptron (MLP) model** designed for the Hugging Face ecosystem. The model follows Hugging Face conventions by integrating a **custom configuration class** and ensuring outputs include both **loss and logits**.

**Features**

* **Custom Model (CustomMLP)**: Implements embedding, linear layers, ReLU activations, dropout, and batch normalization.
* **Configuration Class (CustomConfig)**: Allows for easy model customization, saving, and loading.
* **Hugging Face Integration**: Ensures the model follows Hugging Face’s structure.
* **Dataset Handling**: Utilizes Hugging Face Datasets for seamless data loading.
* **Google Colab Support**: Includes drive mounting for dataset access.

**Dataset - Tweet Sentiment Prediction**

This project utilizes a **tweet-based sentiment analysis dataset** that classifies tweets into multiple emotion categories. The dataset includes:

* **Columns:** Tweet, anger, anticipation, disgust, fear, joy, love, optimism, pessimism, sadness, surprise, trust
* **Type:** Multi-label classification (each tweet can have multiple emotions)
* **Purpose:** Emotion classification from social media text

**Installation**

Ensure you have the necessary dependencies installed:

pip install torch transformers evaluate wandb datasets accelerate

**Usage**

**Training the Model**

Run the Jupyter Notebook to train the model using the following command:

python train.py

**Model Configuration Example**

from transformers import PreTrainedModel

class CustomConfig:

def \_\_init\_\_(self, hidden\_size=256, dropout=0.3, num\_labels=6):

self.hidden\_size = hidden\_size

self.dropout = dropout

self.num\_labels = num\_labels

**Results**

The model is trained on NLP emotion classification tasks, leveraging **Hugging Face Transformers** for efficient training and evaluation.

**Contributing**

Feel free to fork this repository and submit pull requests for improvements.

**License**

This project is open-source and available under the MIT License.