Documentation and Installation Guide

Introduction:

This document helps with all the necessary information to describe and launch our project – "A Machine Learning Model for Early Depression Detection". Our project uses early depression keywords that are fetched from Gemini AI API to perform sentimental analysis on Kaggle twitter dataset (Sentiment140) using Logistic Regression and Convolutional Neural Networks. This facilitates predicting the depression at early stages and helps to take necessary precautions.

This will guide you through installation of required libraries and system requirements.

System Requirements:

Hardware:

- Access to Google Colab Pro or similar cloud computing platform with GPU support.

- Minimum of 4 GPU units for efficient model training.

- Adequate RAM and disk space to handle large datasets and model files.

Software:

- Python 3.8 + installed on the system.

Note: Make sure you've got all the Python libraries you need by installing them using the **`requirements.txt`** file that is uploaded with the project. Also, for the best results when training your model, I suggest you to use something like Google Colab Pro or another cloud computing platform that supports GPUs.

Execute the below command in your terminal to install all the required libraries:

pip install -r requirements.txt

Usage:

We comprised all the sections such as Keyword Extraction, Data Preprocessing, EDA, Model Training and Model Evaluation in one file – "EarlyDepressionDetection.ipynb". Run this notebook to execute our project. Use the provided dataset - "training.1600000.processed.noemoticon.csv".

Use "*AIzaSyAfnBPT2-xRULx-rP05QaHI4qRiQRttBvY*" as API Key to access Google's Gemini AI API. Enter the following text when encountered with the question prompt - "*Early depression keywords count 100 unique*" and extract keywords related to early depression.