**Capstone Project Submission**

**Instructions:**

i) Please fill in all the required information.

ii) Avoid grammatical errors.

| **Team Member’s Name, Email and Contribution:** |
| --- |
| Team Member: 1. Kartik Pandey  2. Aniket Nichat  3. Rohit Thawali  4. Sagar Khekale  Email: 1. [kartikpande12@gmail.com](mailto:kartikpande12@gmail.com)  2. [vrushabhnichat@gmail.com](mailto:vrushabhnichat@gmail.com)  3. [rohitthawali25@gmail.com](mailto:rohitthawali25@gmail.com)  4. sagarkhekale2@gmail.com  Contribution :  Kartik Pandey:   1. Worked on EDA 2. Count of Emotion 3. Compare the MFCC feature for male and female angry audio clips 4. Worked on GRU 5. Deploy Model CNN   Aniket Nichat:   1. Worked on Data Augmentation 2. Noise added in Audio 3. Stretched Audio 4. Shift Audio 5. Worked on LSTM   Rohit Thawali:   1. Worked on Feature Extraction 2. Data Preprocessing 3. Collect Dataset from Kaggle 4. Worked on KNN   Sagar Khekale :   1. Worked on Deploy model 2. Worked on MLP Classifier 3. Work on Confusion Matrix 4. Worked on DecisionTree |
| **Please paste the GitHub Repo link.** |
| https://github.com/Rohit738767/Speech-Emotion-Recognition |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches, and your conclusions. (200-400 words)** |
| **Summary:**  **What is Speech Emotion Recognition?**  **Speech is the simplest way of expressing ourselves as humans. and In Speech Emotion Recognition we can easily check speech and get output in emotion and it is only natural then to extend this communication medium to computer applications. and it could be a method that extricates passionate characteristics from discourse signals by computer and contrasts and analyzes particular parameters and gotten enthusiastic changes. Speech Emotion Recognition, abbreviated SER, is the act of trying to identify human emotion and emotional state through speech.**  **First EDA in this Technique we get an  understanding of information data, using EDA The key feature we use MFCC(Mel Frequency Cepstral Coefficients) and Mel Spectrogram.**  **MFCC –**  **Mel Frequency Cepstral Coefficient (MFCC) method is utilized to recognize feeling of a speaker from their voice. The planned framework was approved for Happy, sad and anger etc emotions .**  **Mel Spectrogram :**  **A mel spectrogram is a spectrogram where the frequencies are converted to the mel scale.**  **Now, The Second Part is Data Augmentation:**  **The basic function of data augmentation is, the Audio datasets can be effectively augmented using various deformation techniques such as pitch and/or time-shifting, the addition of background noise, and volume control. The addition of various noise levels can expand the dataset up to several times. In this subsection, data augmentation techniques applied specifically for the SER**  **Now, Next is Feature Extraction**  **The key to speech emotion recognition is the feature extraction process. The quality of the highlights straightforwardly impacts the accuracy of classification comes about. Regularly, the include extraction strategy plans handcraft features based on acoustic features of speech.**  **Now, Model**  **In Model after we ran the CNN model, we get model 3.h5 file and that we store it and that we used into the testing purpose for web application**  **Problem Statement :**  **Verbal Communication is effective and wanted in workplace and classroom environments alike. there's no denying the notion that Indians lack verbal communication and consequently lag behind within the workplace or classroom environments. This happens despite them having strong technical competencies. Clear and comprehensive speech is that the vital backbone of strong communication and presentation skills.**  **Approach:**  **My approach towards the Project. First I worked on Feature Extraction process The quality of the features directly influences the accuracy of classification results. Then I worked on Data Preprocessing Basically the proposed speech emotion recognition system, the preprocessing methods are used in the first stage to enhance the feature extraction process. Then I Collect Dataset From Kaggle. After that I worked on KNN.**    **Conclusion:**  **So now the conclude the all things in this project some beautiful techniques are used in this project like start form EDA, Data augmentation, Feature extraction not but least model.**  **Speech emotion recognition is very important nowadays so this project help to recognize the emotion using speech We use 6 models and combine all of them we check the CNN model gave us good accuracy to use further deployment.**  . |
| **Drive Link:**  **https://drive.google.com/drive/folders/1y87aiGXywb1JuO\_z98wYvo-YEfHLVwV4?usp=sharing** |