Abstract

A modern development in technology is Speech Emotion Recognition (SER). SER in partnership with Humane-Machine interaction (HMI) has advanced machine intelligence. An emotion precise HMI is designed by integrating speech processing and machine learning algorithm which is sculpted to formulate an automated smart and secure application for detecting emotions in a household as well as in commercial application. This project presents a study of distinguishing emotions by acoustic speech recognition (ASR) using K-means nearest neighbor (K-NN), a machine learning (ML) technique. The most significant paralinguistic information obtained from spectral features is presented by ASR i.e. by using Mel frequency cepstrum coefficient (MFCC). The most important processing techniques methods include feature extraction, feature selection, and classification of emotions. A customized dataset consisting of speech corpus, simulated emotion samples in the Sanskrit language is used to classify emotions in different emotional classes i.e. happy, sad, excitement, fear, anger and disgust. The emotions are classified using a K-NN algorithm over 2 separate models, based on the soft and high pitch voice. Model 1 and 2 achieved about 72.95% and 76.96% recognition
rates respectively.

References


**Index Terms**

Computer Science

Pattern Recognition

**Keywords**

Speech emotion recognition; Machine learning; Mel frequency cepstrum coefficient; Sanskrit language; K-NN.