**SPEECH EMOTION RECOGNITION USING MACHINE LEARNING**

**Abstract:**

This speech-based technology plays a critical role in enhancing human-computer interaction, mental health diagnostics, and customer service applications and also can be used. This speech delves into the methodologies used in Speech Emotion Recognition (SER), including feature extraction techniques and various classification algorithms, such as deep learning models and traditional machine learning approaches.Background noise and varying acoustic conditions can interfere with the clarity of speech signals, adversely affecting recognition accuracy. For recognizing the speech people always choose the English language in the majority of the research and implementation but very less work is done in other languages.The various facets of automatic speech recognition are reviewed in this paper. We have discussed the latest developments in voice recognition technology, a reliable approach to creating an automated system, and the various industries in which these systems are being used.

Humans have always attempted to correspond with objects in a natural language. Communications have been the essential feature of human life, a powerful tool for sharing and building the information that is passed from generation to generation. Among speech processing problems, automatic speech recognition mechanisms of converting the recorded speech signals into the text are one of the most challenging tasks. The signals are typically processed in a digital representation, so speech processing can be observed as a particular case of digital signal processing. The overall performance of an automatic speech recognition system greatly depends upon the acoustic modeling. Hence, building a precise and robust acoustic model holds the key to a suitable recognition performance. People have used different methods for automated speech recognition system. For recognizing the speech people always choose the English language in the majority of the research and implementation but very less work is done in other languages. Our analysis presents the study of the different speech recognition systems present in Indian and foreign languages in the systematic review of speech recognition paper. This paper gives the review of different aspects related to Automatic Speech recognition. We have elaborated the recent advancement in the speech recognition system, robust method for the development of an automatic speech recognition system and application of automatic speech recognition system in different fields.