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NEURAL NETWORK BASED OPTIMAL SPEECH EMOTION RECOGNITION SYSTEM

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Abstract

This paper explores the detection of emotions from speech using region, age, gender and speech independent system. This research aims at "Mind Implemented Robots". The first step in this direction is to recognize human emotions in speech by a computer through neural networks namely Multi Layer Perceptron (MLP) and Support Vector Machine (SVM). It is argued that computers to be able to interact with human beings, it need to have ability to understand emotional state of human being. Authors use Multi Layer Perceptron (MLP) and Support Vector Machine (SVM) to recognize six principle emotions along with neutral one. Ultimate aim of this paper is to design an optimal neural network for emotion recognition which is least complex for synthesis and analysis. The accuracy of recognition of emotions is 100% on training dataset and 75% on cross validation (test).

Key Words: Multilayer Perceptron (MLP), Support Vector Machine (SVM), Confusion Matrix, Formant Frequency, Mean Square Error (MSE), Human Computer Intelligent Interaction (HCII).