World Academy of Science, Engineering and Technology
International Journal of Cognitive and Language Sciences
Vol:11, No:12, 2017

Tensor Deep Stacking Neural Networks and Bilinear Mapping Based Speech Emotion Classification Using Facial Electromyography

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Abstract : Speech emotion classification is a dominant research field in finding a sturdy and profligate classifier appropriate for different real-life applications. This effort accentuates on classifying different emotions from speech signal quarried from the features related to pitch, formants, energy contours, jitter, shimmer, spectral, perceptual and temporal features. Tensor deep stacking neural networks were supported to examine the factors that influence the classification success rate. Facial electromyography signals were composed of several forms of focuses in a controlled atmosphere by means of audio-visual stimuli. Proficient facial electromyography signals were pre-processed using moving average filter, and a set of arithmetical features were excavated. Extracted features were mapped into consistent emotions using bilinear mapping. With facial electromyography signals, a database comprising diverse emotions will be exposed with a suitable fine-tuning of features and training data. A success rate of 92% can be attained deprived of increasing the system connivance and the computation time for sorting diverse emotional states.

Keywords : speech emotion classification, tensor deep stacking neural networks, facial electromyography, bilinear mapping, audio-visual stimuli
Conference Title : ICSRLP 2017 : International Conference on Speech Recognition and Language Processing
Conference Location : Amsterdam, Netherlands
Conference Dates : December 04-05, 2017