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Speech Detection Model Based on Deep Neural Networks Classifier for Speech Emotions Recognition

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Abstract : Speech emotion recognition has received increasing research interest all through current years. There was used emotional speech that was collected under controlled conditions in most research work. Actors imitating and artificially producing emotions in front of a microphone noted those records. There are four issues related to that approach, namely, (1) emotions are not natural, and it means that machines are learning to recognize fake emotions. (2) Emotions are very limited by quantity and poor in their variety of speaking. (3) There is language dependency on SER. (4) Consequently, each time when researchers want to start work with SER, they need to find a good emotional database on their language. In this paper, we propose the approach to create an automatic tool for speech emotion extraction based on facial emotion recognition and describe the sequence of actions of the proposed approach. One of the first objectives of the sequence of actions is a speech detection issue. The paper gives a detailed description of the speech detection model based on a fully connected deep neural network for Kazakh and Russian languages. Despite the high results in speech detection for Kazakh and Russian, the described process is suitable for any language. To illustrate the working capacity of the developed model, we have performed an analysis of speech detection and extraction from real tasks.

Keywords : deep neural networks, speech detection, speech emotion recognition, Mel-frequency cepstrum coefficients, collecting speech emotion corpus, collecting speech emotion dataset, Kazakh speech dataset
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