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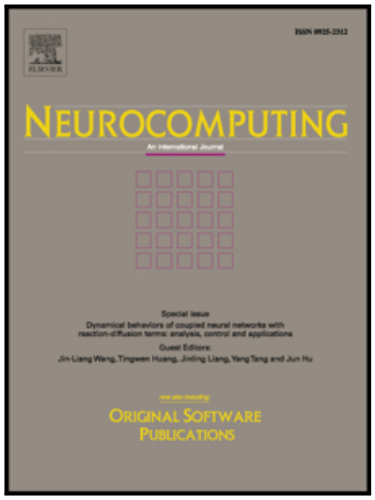

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Speech emotion recognition based on feature selection and extreme learning machine decision tree☆

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Abstract

Feature selection is a crucial step in the development of a system for identifying emotions in speech. Recently, the interaction between features generated from the same audio source was rarely considered, which may produce redundant features and increase the computational costs. To solve this problem, feature selection method based on correlation analysis and Fisher is proposed, which can remove the redundant features that have close correlations with each other. To improve the recognition performance of the feature subset after proposal feature selection further, an emotion recognition method based on extreme learning machine (ELM) decision tree is proposed according to the confusion degree among different basic emotions. A framework of speech emotion recognition is proposed and the classification experiments based on proposed classification method by using Chinese speech database from institute of automation of Chinese academy of sciences (CASIA) are performed. And the experimental results show that the proposal achieved 89.6% recognition rate on average. By proposal, it would be fast and efficient to discriminate emotional states of different speakers from speech, and it would make it possible to realize the interaction between speaker-independent and

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