The Untapped Potential of Feature Selection for Emotion Recognition: Literature Review

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Abstract:
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Abstract:
Emotional state identification has many applications in human computer interaction, intelligent machine interface, smart classrooms and medical application. Many approaches are introduced to recognize emotions from face expression, speech, gesture, body poses and skin conductance. There is a high correlation between emotions and physiological changes and since they are unconscious responses, physiological signals have added benefits. Electrocardiogram (ECG) is one of the physiological signals, which results from activity of autonomous nervous system (ANS) reflects the underlying true emotional state. The aim of this work is to give an overview of methods to select features from ECG contributing to emotion recognition. The reviewed studies reveal that the best combination of features leads to improved accuracy.

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Contents

Human Emotion is a complex process that results in physical and psychological changes which are comprised of components such as thought, cognitive reactions, behavior and bodily changes. Various models have been developed considering interactions of these components. Emotion modelling can be considered as a crucial problem which has wide applications in many fields such as human machine interaction, disease diagnosis, affective gaming, criminal investigation and smart classrooms. General approaches of emotion recognition is by analyzing facial expressions, gestures, eye movement and voice. Unlike these controllable signals, physiological signals are involuntary and one cannot hide their emotions [1].