

ABSTRACT SUBMISSION



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Device Smart Wearable for Emotion Recognition from Physiological Signals During the Interaction with a Video Game to Detect Personality Traits

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ABSTRACT (NO MORE THAN 500 WORDS:)

The purpose of this research is to build an emotion recognition system for the identification of personality traits using physiological signals (Electrocardiogram (ECG), Galvanic Skin Response (GSR), and Electromyogram (EMG)) and videogames. In this work, we present the signal acquisition, processing and feature extraction system for three physiological signals (ECG, GSR, EMG) used to detect the level of arousal of an individual using Russell's model of affect as a reference. Some metrics were extracted from the physiological signals related to the activation of the sympathetic and parasympathetic autonomic nervous system. The system allows for the capture of the three signals, while the test subject is playing a videogame, which provides the emotional stimuli. Then, the three raw signals are conditioned and filtered to extract metrics, such as, beats per minute (BPM), heart rate variability (HRV), number of GSR peaks in the skin conductance response (SCR) and forearm contraction time. To identify and describe the behavior of these four metrics with the arousal level from Russell's model of affect, a sequence alignment is implemented of the behavior of these metrics during a period in which the subject is in a state of relaxation and while playing the game.

Index Terms- Emotion recognition; physiological signals; personality traits; videogames.