

Authoring Tactile Gestures: Case Study for Emotion Stimulation

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Abstract : The haptic modality has brought a new dimension to human computer interaction by engaging the human sense of touch. However, designing appropriate haptic stimuli, and in particular tactile stimuli, for various applications is still challenging. To tackle this issue, we present an intuitive system that facilitates the authoring of tactile gestures for various applications. The system transforms a hand gesture into a tactile gesture that can be rendered using a home-made haptic jacket. A case study is presented to demonstrate the ability of the system to develop tactile gestures that are recognizable by human subjects. Four tactile gestures are identified and tested to intensify the following four emotional responses: high valence – high arousal, high valence – low arousal, low valence – high arousal, and low valence – low arousal. A usability study with 20 participants demonstrated high correlation between the selected tactile gestures and the intended emotional reaction. Results from this study can be used in a wide spectrum of applications ranging from gaming to interpersonal communication and multimodal simulations.

Keywords : tactile stimulation, tactile gesture, emotion reactions, arousal, valence

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