

Use of Computer and Machine Learning in Facial Recognition

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Abstract : Facial expression measurement plays a crucial role in the identification of emotion. Facial expression plays a key role in psychophysiology, neural bases, and emotional disorder, to name a few. The Facial Action Coding System (FACS) has proven to be the most efficient and widely used of the various systems used to describe facial expressions. Coders can manually code facial expressions with FACS and, by viewing video-recorded facial behaviour at a specified frame rate and slow motion, can decompose into action units (AUs). Action units are the most minor visually discriminable facial movements. FACS explicitly differentiates between facial actions and inferences about what the actions mean. Action units are the fundamental unit of FACS methodology. It is regarded as the standard measure for facial behaviour and finds its application in various fields of study beyond emotion science. These include facial neuromuscular disorders, neuroscience, computer vision, computer graphics and animation, and face encoding for digital processing. This paper discusses the conceptual basis for FACS, a numerical listing of discrete facial movements identified by the system, the system's psychometric evaluation, and the software's recommended training requirements.

Keywords : facial action, action units, coding, machine learning

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