

Using Affective Technologies to Increase Engagement and Motivation in Fitness and Sports

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Although emotions were, for a long time, considered undesirable for rational behaviour, there are now evidences in neuroscience and psychology that place emotions as an important factor in problem solving capabilities and intelligence in general. Work by Picard and others has created considerable awareness for the role of affect in human-computer interaction. In fact, a strong new field is emerging in computer science: affective computing, i.e. “computing that relates to, arises from or deliberately influences emotions” (Picard 1997). As key ingredients of affective computing Picard identifies recognizing, expressing, modelling, communicating, and responding to emotional information. In my presentation, I presented first ideas to make use of affective technologies in fitness and sports. In particular, earlier work in the following areas might serve as starting points:

- 1) Signal processing techniques and machine learning methods to recognize a user’s emotional state from various input channels, such as physiological data (Kim & André 2008). A particular challenge arising in the sport domain is the elimination of noise from signals caused by motion artefacts.
- 2) Studies that investigate how to increase engagement and motivation in fitness and sports. Examples include the employment of virtual competitors or training mates, the integration of social elements, such as sharing of information on training tracks, and the use of auditory feedback in mobile outdoor training assistants (Kurdyukova et al. 2008)
- 3) Mobile applications that collect context and user data over a longer period of time (see Hammer 2008). Such applications might be employed to derive correlations between a sportsman affective state and his or her performance.

References:

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