Digital Characters as Affective Interfaces

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Computer controlled characters were introduced in the field of user interfaces to ease the interaction and bring joy to the human user. Their behaviour and responses mostly rely on information derived from language. With current research going on there is the chance to enhance these 'artificial humans' with real emotional sensitivity. We will discuss which application area could gain from affective computing [1] and what other criteria might be worth considering.

Keywords: user interface, affective interface, avatar, emotional control

SHORT DESCRIPTION OF THE TALK

Digital characters have been employed in entertainment and game environments. They promised to be human-like counterparts for teaching, guidance, information delivery and other tasks. Humans are able to recognise various cues in speech that makes it is easy to infer the emotional state of the counterpart, e.g. if someone is angry, and adopt to it. A digital character or any other type of human-computer interface should be able to do the same to further ease interaction. Consider a situation in that a user becomes highly frustrated because the user interface 'ignorantly' shows the same 'dull' reaction as ten times before. An emotional sensitive interface surely would be beneficial in such circumstances.

An autonomous, multi-modal digital character as presenter in an augmented reality environment (see figure 1) has shown positive impact on visitors [2]. The virtual figure could build a personal relation between the visitor and the presentation content. This was attributed to the human-like behaviour and the incorporation of the virtual human into real space. If such a presenter was further enhanced with sensitivity to emotional states, one would possibly expect some benefits, i.e. fewer conversation break-downs and more comfort for computer illiterate people. Criticism from authors that point to the fundamental difference between man and computer [3] will also be addressed.

FIGURE 1: A digital character with multi-modal abilities conversing with the user in augmented reality

The talk will present an interesting insight into digital characters, their control and how it could be improved by emotional sensitivity. It will not entirely cover but make a contribution to the following questions:

- Which function do emotions have in HCI and can we develop an actionable framework to support it?
- Which value might affective applications, affective systems, and affective interaction have?
- Which opportunities and risks are there?
- Can we solve emotion related issues within the HCI domain, or do we need support from other fields of computer science or other sciences?
- Are there new intersections between sub-disciplines concerning emotions, and is there need for a new sub-discipline?
- Which impact will emotion awareness have on HCI in general and the sub- disciplines in particular?

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