

Affective Technology, should it be future or remain fiction?

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In Book VII of *The Republic*, dated 360 B.C., Plato describes his allegory of the cave. He questions our reality, which could as easily be an illusion. This touches upon the foundations of philosophy but also on the foundations of mathematics. Both branches of science question axioms taken often for granted. As such, mathematics touches on the foundations of formal representations; so, also of engineering. Philosophy touches on concepts and semantic relations in a similar way. With a technology push that only increases in momentum and philosophy which needs its time to pin point concepts and semantic relations, this conference is timely as indeed a bridge or at least a link should be established. Such a link shields us from making mistakes and even possible harm.

In my talk, I will illustrate basic notions such as mentioned above and will illustrate their use in daily practice. To limit the scope of the basic notions and bring it to engineering practice, I will discuss affective technology as a representative case. I will start with briefly describing:

1. The idea behind this: Computers are more than machines to calculate with, they are a part of our daily activities. They even determine our social lives partly and provide the means to communicate. A next step to take would be to make them empathic, at least to a certain extent.
2. The technology: To capture emotions, computer vision techniques, speech signal processing, and physiological (or biosignals) processing are often employed.
3. The concept of emotion: This is very hard to capture. So far, no consensus exists on its definition.
4. The link ... Affective Technology: This branch of engineering aims to capture emotions and feed this to systems' to adapt their behavior accordingly.

This is, however, only where it begins, not where it ends.

When considering the implications of affective technology, several questions arise. What would this mean, when computers vanish, gain more and more autonomy, and can also sense our feelings? Various additional questions arise; for example, Should we be able to shield our emotions? What legal aspects go with such technology? and Is this where computers will start to take over? These questions illustrate that when introducing affective technology (e.g., robot nannies), this should be done with the utmost care. In the presentation some of the challenges affective technology has to overcome will be identified, which are often only briefly touched, namely: taking into account personality (including interpersonal differences), the reliability of the artificial senses, and the problem of taking context into account. Parallels are drawn with other branches of engineering (e.g., artificial intelligence and biomedical technology), which illustrates the problems affective technology has to face. This makes one wonder: affective technology, should it be future or remain fiction?

References:

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