Mind-reading robots

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Abstract

In contrast to other animals, humans are good at mind-reading in the sense that they can represent the contents of the minds of others. I divide the competence for mind-reading (also known as inter-subjectivity or theory of mind) into five components: representing (1) the emotions, (2) the desires, (3) the attentions, (4) the intentions and (5) the beliefs and knowledge of others. Recent attempts to exploit control theory and other programming techniques for modelling various cognitive functions will be discussed and I will outline how this modelling approach can be combined with the analysis of intersubjectivity. I then turn to the question of how these techniques can be used to construct mind-reading robots. The focus will be on achieving joint attention and joint intention in human-robot interaction.

Bio

Professor Peter Gärdenfors is Head of Cognitive Science at Lund University, Sweden. His works on belief revision and conceptual spaces have been widely recognized within computer science. He is member of several academies and a member of the Prize Committee for the Prize in Economic Sciences in Memory of Alfred Nobel since 2011.