

Interaction cognitive : de l'interaction entre les humains à l'interaction avec les robots

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Résumé

Cet exposé a pour but de présenter les éléments essentielle pour la compréhension et l'analyse de l'interaction cognitive entre les humains sans toutefois avoir la prétention de proposer des définitions univoques. On s'intéressera, notamment, aux signaux d'interaction pour la communication verbale et non-verbale, d'émotions, d'intentions... ainsi que pour la régulation de l'interaction. Nous présenterons des études montrant l'importance de ces signaux dans l'interaction face-à-face. Ensuite, nous montrerons comment ces signaux sont exploités et analysés en robotique. Ces méthodologies font appels à des domaines très variés couvrant le traitement du signal, la reconnaissance des formes ou bien encore l'intelligence artificielle. Cet exposé se propose également de pointer les challenges ainsi que les limitations des méthodologies et applications en interaction cognitive.

Biographie :

Dr. Mohamed CHETOUANI received the M.S. degree in Robotics and Intelligent Systems from the University Pierre and Marie Curie (UPMC), Paris, 2001. He received the PhD degree in Speech Signal Processing from the same university in 2004. In 2005, he was an invited Visiting Research Fellow at the Department of Computer Science and Mathematics of the University of Stirling (UK). Dr. Chetouani was also an invited researcher at the Signal Processing Group of Escola Universitaria Politecnica de Mataro, Barcelona (Spain). He is currently an Associate Professor in Signal Processing and Pattern Recognition at the University Pierre et Marie Curie. His research activities, carried out at the Institute of Intelligent Systems and Robotics, cover the areas of non-linear signal processing, feature extraction, pattern classification and fusion for human centered interaction analysis: verbal and non-verbal communication, physiological signals. He is member of the Management Committee for the COST action 2102: "Cross-Modal Analysis of Verbal and Non-verbal Communication". He is an Associate Editor of the Cognitive Computation Journal (Springer) and a Guest Editor for a Special Issue in Speech Communication on "Non-Linear and Non- Conventional Speech Processing". He was the Chairman of the ISCA Tutorial and Research Workshop on Non-Linear Speech Processing in 2007. He is also the co-chairman of the French Working Group on Human-Robots/Systems Interaction (GDR Robotique CNRS). In 2008, he led the project titled: Multi-Modal Communication with Virtual Agents and Robots for the 4th international summer workshop on Multi-Modal Interfaces (eNTERFACE'08).