Joint Action for Multimodal Embodied Social Systems

Fact Sheet

Project Information

Funded under
FP7-ICT

Overall budget
€ 3 747 367

EU contribution
€ 2 860 000

Coordinated by
THE UNIVERSITY OF EDINBURGH
United Kingdom

JAMES
Grant agreement ID: 270435

Closed project

Start date
1 February 2011

End date
31 July 2014

Project description

Cognitive Systems and Robotics

As robots become more and more integrated into our daily lives, they must increasingly deal with situations in which socially appropriate interaction is vital. A robot not only requires the necessary physical skills to perform objective tasks in the world, but also the proper social skills to understand and respond to the intentions, desires, and affections of the people it interacts with. The goal of the JAMES project is to develop an artificial embodied agent that supports socially appropriate, multi-party, multimodal interaction. JAMES will focus on the qualitative aspects of task
achievement in social situations, and how such tasks can be improved through multimodal communication.

The JAMES project ("Joint Action for Multimodal Embodied Social Systems") aims to develop a socially intelligent humanoid robot combining efficient task-based behaviour with the ability to understand and respond in a socially appropriate manner to a wide range of multimodal communicative signals in the context of realistic, open-ended, multi-party interactions.

To direct our research in JAMES, we will focus on five core objectives: (1) analysing natural human communicative signals, (2) building a model of social interaction, (3) extending the model to manage learning and uncertainty, (4) implementing the model on a physical robot platform, and (5) evaluating the implemented system.

The work in JAMES will build on state-of-the-art results and techniques in seven areas: social robotics, social signal processing, machine learning, multimodal data collection, planning and reasoning, visual processing, and natural language interaction.

JAMES will combine the analysis of human social communicative behaviour, the development and integration of state-of-the-art technical components, and the evaluation of integrated systems. Work on these threads will be interleaved: the results of the human data analysis will be used in the development of the technical components, while the robot will be used for further data collection and evaluation studies.

JAMES will extend the state-of-the-art in social robotics by moving beyond one-on-one, long-term relationships to deal with more open-ended, multi-party, short-term situations. The research in JAMES will also increase our understanding of how humans use multimodal social cues to communicate and coordinate their interactions in task-driven, joint-action contexts. The individual technical contributions to the system components will also provide state-of-the-art results in their respective research areas.

Fields of science

Programme(s)

Topic(s)
Call for proposal

FP7-ICT-2009-6

Funding Scheme

CP - Collaborative project (generic)

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Higher or Secondary Education Establishments

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