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Research Topic
Natural language processing

Research Problem
How can we create a robot that behaves like a human when walking side by side with a person?

Problem Statement
Given a social and physical environment in which a robot is accompanying a person, choose a path that preserves the social norms and expectations of the accompanying person(s).

Social and physical environment: positions and dimensions of objects and boundaries(e.g. walls in a corridor), and people.

Preserving social norms and expectations: maintaining the personal space of all people while not allowing objects or people to come between the robot and the companion(s)

Problem Description
Automated systems are getting better at the nuts and bolts of conversation but are a long way from natural conversations. As natural language processing systems get better and better, researchers can start working on more and more subtle problems. One of these involves the special aspects of social interactions (e.g. walking next to someone). Acknowledgements are another subtle social cue that people perform without thinking but that has to be explicitly described in robots. These are the kinds of problems that Dr. Simmons works on.

Computer Science Perspective
Natural language processing is a fundamental problem in artificial intelligence. These subtleties require new algorithms for active participation in social interactions.

Actively Involved Discipline:
A discipline is an actively involved discipline if there is an actively involved individual who belongs to that discipline.

An actively involved individual is an individual who has received credit in any related publications or presentations or who is mentioned by the principal investigators, either through verbal or written communications, online or offline, digital or analog.

Disciplines actively involved

Robotics
Human Computer Interaction

Description of Disciplines Involved

Psychology
Sociology
Cognitive Science

References

Presenter web page:

<http://www.cs.cmu.edu/%7Emmv/>

Robot soccer at cmu:

<http://www.cs.cmu.edu/~robosoccer/main/>

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