PRINCETON ACM / IEEE-CS CHAPTERS
MARCH 2008 JOINT MEETING

Designing Meaningful Agents

Matthew Stone

This talk explores meaningfulness as an explicit design goal for conversational agents, programs that can understand and contribute to spoken dialogue with a human user in ordinary natural language. When we talk with other people, our judgments of meaning provide a systematic perspective on what we are doing. As our conversations unfold, we rely on these judgments to get our ideas across flexibly and effectively. We aim to extend these abilities to computer systems, so that we can understand them intuitively, and so that they in turn can relate better to us.

Meaning is not a module or a level of representation. Meaning characterizes the relationship between what the system does and the broader world in which it is a part. A meaningful system must be locked onto objects and distinctions in the world that matter, and committed to sharing this information with its interlocutors. Thus, a system requires many coordinated modules and representations to communicate meaningfully. It is a problem for design. Our approach is to design agents around representations of joint activity, communicative intentions and a coherent evolving discourse context, and to compute these representations through processes of social intelligence, perception, decision-making and learning. We sketch some preliminary experiments with such designs, and suggest some of the prospects and challenges for defending the claim that the agents we build mean what they say.

Matthew Stone is Associate Professor in the Computer Science Department at Rutgers University, with a joint appointment in the Center for Cognitive Science and a courtesy appointment in Linguistics. He earned his BSc in Cognitive and Linguistic Sciences at Brown University and PhD in Computer and Information Science at the University of Pennsylvania, efficiently combining four specialties in two degrees. Recently he was a Leverhulme Trust Visiting Fellow at the Human Communication Research Centre, School of Informatics, at the University of Edinburgh. The work reported here suggests a synthesis of his longstanding interests in language, action, embodiment, interaction and meaning – work that has been published in diverse venues, including top conferences and journals in computational linguistics, artificial intelligence and computer graphics.

Date:	Thursday, March 20, 2008, 8:00 pm. (Refreshments and networking at 7:30 pm.)
Place:	Sarnoff Corp., Routes 1 and 571, Princeton, NJ
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On-line info:	**`http://www.acm.org/chapters/princetonacm`**

All ACM / IEEE-CS meetings are open to the public. Students and their parents are welcome. There is no admission charge, and refreshments are served.

A pre-meeting dinner with the speaker is held at 6:00 p.m. at Ruby Tuesday's Restaurant on Route 1. Please send email to **princetonacm@acm.org** in advance if you plan to attend the dinner.