



DEPARTMENT OF COMPUTER & INFORMATION SCIENCES

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ABSTRACT:

BEYOND WATSON: TOWARDS MACHINE AS A TRUE THOUGHT PARTNER

Language understanding has long been a holy grail of Artificial Intelligence, but what constitutes language understanding? IBM's Watson system famously defeated the two best human players in the game of Jeopardy! in 2011. While Watson's performance in those games may lead one to believe that the computer system "understood" language — certainly we'd say so for any human who could achieve that level of performance — its level of understanding was impoverished for developing many useful NLP applications in which machines attempt to deliver maximum value to their human counterparts by acting as true thought partners. To achieve this goal, we aim to develop an understanding paradigm that models agents, their actions, motivations, and goals, leading to the ability to explain the how and why of certain actions and decisions.

In this talk, I will give an overview of the IBM Watson Jeopardy! system and the 5-year journey culminating in the final games. I will then describe and demonstrate the deficiencies of most current approaches to language understanding, and introduce a scalable natural learning approach to language understanding that is aimed at addressing these deficiencies. The system we are developing at Elemental Cognition is designed to continuously read and interact with humans to enhance its knowledge both at the language level and at the domain level. I will discuss and demonstrate how our system learns from users and how it can apply that knowledge to understand new stories.

BIOGRAPHY: Jennifer Chu-Carroll is a Senior Research Scientist at Elemental Cognition, focusing on natural language semantics and dialogue management. Prior to joining Elemental Cognition, Jennifer was a Research Staff Member and manager at the IBM T.J. Watson Research Center. Jennifer's most notable accomplishment at IBM was as a key technical lead on the Watson project, in which a high-performing question answering system defeated the two best human players at the game of Jeopardy!. Previously, she was a Member of Technical Staff at Lucent Technologies Bell Laboratories focusing on spoken dialogue management.

Through her career, Jennifer has maintained a strong focus on research and development in Natural Language Processing and related areas. She has published extensively in top conferences and journals, and is very engaged in her research community. She has served as general chair of NAACL-HLT 2012, program committee co-chair of NAACL-HLT 2006, as area chairs and program committees of many key conferences, and on the editorial boards of multiple journals. Jennifer received a Ph.D. in Computer Science from the University of Delaware.