

# Going Beyond Fact-based Question Answering

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## Abstract

To solve the AI problem, we need to develop systems that go beyond answering fact-based questions. Watson has been hugely successful at answering fact-based questions, but to solve hard AI tasks like passing science tests and understanding narratives, we need to go beyond simple facts. In this talk, I discuss how the systems I have most recently worked on have approached this problem. Watson for Healthcare answers Doctor's Dilemma medical competition questions, and WatsonPaths answers medical test preparation questions. These systems have achieved some success, but there is still a lot more to be done. Based on my experiences working on these systems, I discuss what I think the priorities should be going forward. First, to deal with the richness of human knowledge, we need to move beyond propositional logic to predicate logic. Second, to deal with the real world, we need to represent and reason about events and time. Third, to find multiple solutions and keep them distinct from one another, we need to use declarative problem solving methods like answer set programming. As one example of a formalism that embodies these three things, I review the event calculus described in my book Commonsense Reasoning. This formalism is especially useful for the narrative understanding task.

**1998 ACM Subject Classification** I.2.1 Applications and Expert Systems, I.2.4 Knowledge Representation Formalisms and Methods

**Keywords and phrases** Commonsense Reasoning

**Digital Object Identifier** 10.4230/OASICS.ICCSW.2015.2

**Category** Keynote Talk



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2015 Imperial College Computing Student Workshop (ICCSW 2015).

Editors: Claudia Schulz and Daniel Liew; pp. 2-2

OpenAccess Series in Informatics

**OASICS** Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

