Knowledge and Reasoning in IBM Watson

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Abstract. IBM Watson is arguably one of the most advanced forms of AI in the cognitive computing marketplace, as demonstrated by the historic exhibition match on the television quiz show Jeopardy!. The hybrid use of machine learning, structured data and reasoning techniques is part of the reason for its success. The new challenge for Watson is to help human professionals in a wide variety of areas, including healthcare, science, and law. Towards this aim, the system needs to show a professional level of competence, leveraging deep domain knowledge accumulated over decades and built on traditional frameworks of mathematics and logic. Enabling computational cognitive assistants to acquire, represent, maintain and reason with that knowledge is a crucial next step. In this talk I will describe progress made at IBM Research and the new research directions we envision.