



Answering the Question, and Vice Versa

Experts are adept at answering questions in their fields, but even the most knowledgeable authority can't be expected to keep up with all the data generated today. Computers can handle data, but until now, they were inept at understanding questions posed in conversational language. Watson, the IBM computer that won the *Jeopardy!* Challenge, is an example of a computer that can answer questions using informal, nuanced, even pun-filled, phrases. Graph theory, formal logic, and statistics help create the algorithms used for answering questions in a timely manner—not at all elementary.

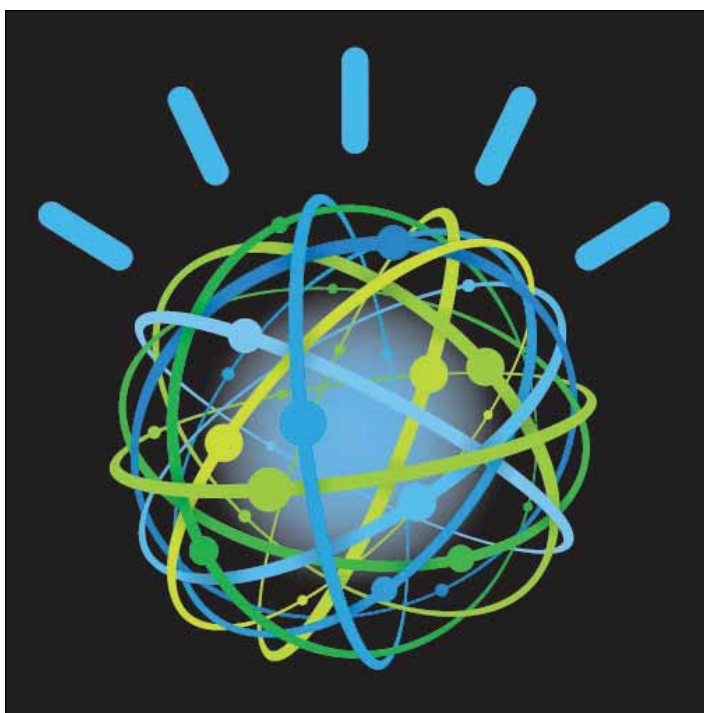


Image courtesy of IBM.

Watson's creators are working to create technology that can do much more than win a TV game show. Programmers are aiming for systems that will soon respond quickly with expert answers to real-world problems—from the fairly straightforward, such as providing technical support, to the more complex, such as responding to queries from doctors in search of the correct medical diagnosis. Most of the

research involves computer science, but mathematics will help to expand applications to other industries and to scale down the size and cost of the hardware that makes up these modern question-answering systems.

For More Information: *Final Jeopardy: Man vs. Machine and the Quest to Know Everything*, Stephen Baker, 2011.



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