

IBM and the University of Illinois to Pioneer Next-Generation Cognitive Computing Systems

New Center advances how Watson and other machine learning systems can accelerate a range of cognitive computing applications such as multi-modal education

PR Newswire

YORKTOWN HEIGHTS, N.Y. and URBANA, Ill., April 15, 2016 /[PRNewswire](#)/ -- IBM Research (NYSE: [IBM](#)) today announced plans for a multi-year collaboration with the University of Illinois Urbana-Champaign to create the Center for Cognitive Computing Systems Research (C(3)SR) which will be housed within the College of Engineering on the Urbana campus. Opening in the summer of 2016, the C(3)SR will integrate and advance scientific frontiers in both machine learning and heterogeneous computing systems optimized for new cognitive computing workloads.

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The C(3)SR will build and optimize integrated systems such as state-of-the-art cognitive computing systems modeled on IBM's Watson technology that can master a subject area by learning from multimedia and multi-modal educational content. Such systems will efficiently ingest vast amounts of data including videos, lecture notes, homework, and textbooks, and reason through this knowledge effectively enough to be able to eventually pass a college level exam. The optimized computing systems developed by the C(3)SR can be expected to perform orders of magnitude better than today's systems that run cognitive applications.

"IBM's collaboration with the University of Illinois will help our researchers to extend the boundaries of cognitive computing and Watson even further," said Arvind Krishna, Senior Vice President and Director, IBM Research. "The cognitive era of computing is going to be marked by a full range of disciplines coming together, advancing in parallel to help solve the world's most challenging problems. The University of Illinois' leadership in heterogeneous systems and learning research, its tremendous talent and longstanding relationship with IBM, make it ideal for this endeavor."

With the increased computational demands of cognitive computing, the researchers will further optimize Power Systems for cognitive workloads. Researchers will have access to the OpenPOWER Foundation's systems technology as well as technical development and support from IBM Systems Group. The new hardware designs and cognitive algorithms will be released to the open source community and OpenPOWER

Foundation, of which both IBM and the University of Illinois are members.

The C(3)SR will be headed by Professor Wen-Mei Hwu, a faculty member in the Department of Electrical and Computer Engineering at Illinois, who will be supported by a team of faculty members, graduate students and software engineers who bring strong expertise in both learning and systems research. University of Illinois researchers will collaborate with IBM scientists who will provide guidance and technology expertise and all of the C(3)SR's research will be conducted on IBM OpenPOWER technology.

"The study of machine learning and natural language understanding is critical to making sense of the 2.5 billion gigabytes of data being created every single day," said Hwu. "Our University of Illinois team is excited to broaden this research with IBM through this new Center, which will further elevate our understanding of the potential for cognitive computing."

This collaboration is part of IBM's ongoing academic initiatives that help students develop skills and understanding of cognitive computing to meet the increasing demand for high skilled technology professionals. IBM worked with eight leading universities around the world in the early development of its Watson cognitive computing system and today, IBM is working with more than 250 universities around the world to help teach courses in various cognitive computing disciplines. These courses offer students real-world case study learning experiences and access to Watson technology via the cloud. IBM also hosts university competitions, challenging students to identify industry-specific challenges and support to commercialize their ideas.

About IBM Research

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