Association for Computing Machinery

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ACM COUNCIL ON WOMEN HAILS INNOVATOR IN INFORMATION RETRIEVAL

Microsoft Research's Dumais Changed the Way People Search for Information

NEW YORK, April 8, 2014 – ACM-W (the Association for Computing Machinery's Council on Women in Computing) today named Susan T. Dumais of Microsoft Research as the 2014-2015 Athena Lecturer. Dumais introduced novel algorithms and interfaces for interactive retrieval that have made it easier for people to find, use and make sense of information. Her research, at the intersection of human-computer interaction and information retrieval, has broad applications for understanding and improving searching and browsing from the Internet to the desktop. The Athena Lecturer award celebrates women researchers who have made fundamental contributions to computer science. It includes a $10,000 honorarium provided by Google Inc.

"Dumais has helped us understand that the search is not the end goal," said Mary Jane Irwin, who heads the ACM-W awards committee. "Her focus is on understanding when and why people search, and presenting results in context to help integrate those results into the larger search process. Her sustained contributions have shaped the thinking and direction of human-computer interaction and information retrieval, and influenced generations of student interns through collaborative projects with academic and industry partners."

Dumais' initial research demonstrated that different people use different vocabulary to describe the same thing, and that this mismatch limits the success of traditional keyword-based information retrieval methods. To build search systems that avoided the vocabulary problem, she and her colleagues invented Latent Semantic Indexing (LSI). A key feature of LSI is its ability to extract the latent conceptual structure from a large collection of texts by analyzing the associations between terms that occur in similar contexts, thus enabling a search engine to retrieve using concepts rather than keywords. Beyond information retrieval, LSI has been used to model various aspects of human cognition such as language acquisition and textual coherence.

Recently, Dumais' research has analyzed how web content changes over time and how people revisit web pages, establishing that re-visitation patterns are influenced by user intent and changes in content. Her results have produced a retrieval model that uses web page changes to improve search ranking, and new tools to help people understand how the information they interact with changes over time in both expected and unexpected ways. Finally, her research on user modeling and context has enabled search engines to personalize search experiences for different individuals.

The author of more than 200 articles on information science, human-computer interaction, and cognitive science, Dumais holds several patents on novel retrieval algorithms and interfaces.

Background

Dumais is Distinguished Scientist and Deputy Managing Director of the Microsoft Research Lab in Redmond, Washington. Previously, at Bellcore and Bell Labs, she worked on Latent Semantic Indexing. She is an adjunct professor at the University of Washington, and has been a visiting faculty member at Stevens Institute of Technology, New York University, and the University of Chicago.

An ACM Fellow, she was elected to the CHI Academy and the National Academy of Engineering, and received the SIGIR Gerard Salton Award for Lifetime Achievement. She is past chair of ACM's Special Interest Group on Information Retrieval (SIGIR) and serves on the editorial boards of several ACM journals.

Dumais is a graduate of Bates College with a B.S. degree in Mathematics and Psychology, and a Ph.D. degree in Cognitive and Mathematical Psychology from Indiana University.

The Athena Lecturer is invited to present a lecture at an ACM event. Dumais' lecture will be delivered at an event to be determined. Each year, the Athena Lecturer honors a preeminent woman computer scientist. Athena is the Greek goddess of wisdom; with her knowledge and sense of purpose, she epitomizes the strength, determination, and intelligence of the "Athena Lecturers." The 2014-2015 Athena Lecturer award will be presented at the ACM Annual Awards Banquet, June 21, in San Francisco, CA.

About ACM

ACM, the Association for Computing Machinery **www.acm.org,** is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

About ACM-W

ACM-W is the ACM Council on Women in Computing **http://women.acm.org**. It celebrates, informs and supports women in computing, and works with the ACM-W community of computer scientists, educators, employers and policy makers to improve working and learning environments for women.

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