

Search Party

Professors' Strategies Make Finding Information Easier

Two professors may be on to something that could improve how people learn effective strategies for finding information.

Suresh Bhavnani and collaborator Marcia Bates hope that users will be able to burrow into large repositories of information and find what they need quickly by using some easy-to-learn yet powerful search strategies.

Bhavnani, an assistant professor at SI, and Bates, a professor of information studies at the University of California at Los Angeles, have teamed up to explore how their research can benefit each other. Bhavnani's background is in human-computer interaction and cognitive science, and Bates is well-known for information retrieval. It's more than just East meets West, it's merging the latest thinking in information processing with the best of traditional approaches.

Their effort relies in part on Bhavnani's experience with teaching efficient and effective strategies to use complex computer systems in such a way that new users can quickly grasp them and significantly reduce the time they need to become proficient.

The approach improves on what nearly everyone does on a daily basis — use a computer — by letting the computer do the work.

Bhavnani backs his claims with research conducted at the U-M, Carnegie Mellon University, and the University of Western Australia. These studies are the basis of Bhavnani's course for first-year undergraduates who learn how to use Microsoft *Word* (word processing) and *Excel* (spreadsheets) and Macromedia *Dreamweaver* (Web site development).

This fall, nursing students with little or no experience with computers quickly learned general strategies and commands for streamlining their work. The traditional way would have had them focusing on software commands alone. Bhavnani says the next step is to teach general and effective strategies to search for information.

For example, an effective strategy to search for an unfamiliar topic is to first attempt to take advantage of the compilations of information on that topic done by others. Such compilations include published literature reviews,

and domain portals on the Web developed by authoritative organizations.

In a recent study, Bhavnani says, expert health-care searchers first visited reliable compilations of health-care information like MEDLINEplus to find good sources of information about a topic, resulting in effective searches. In contrast, novices tended to start with searching through general-purpose search engines like Google, which led to far less effective searches.



Marcia Bates and Suresh Bhavnani

“Some of the strategies that Suresh has devised are extremely high-level, general-purpose strategies,” Bates adds. “Sorting through what the very nitty-gritty specific things are that are embedded in higher-level strategies, as far as I know, has never been done in search and retrieval.

“Some of the search techniques developed in earlier years may not be as important in a Web environment, but some may be more important. That's part of what has to be sorted out.”

If general strategies for information retrieval take hold, it could mean changes should be made in how Web sites are built. “It's still the case that if users really want to get all of the relevant materials,” Bates says, “they require better techniques than are readily available in some systems, and some of these cognitive techniques we're talking about will come in handy, because it will enable them to work around the limitations.”

Bhavnani adds, “If you have experience in using powerful search strategies, you could be more successful in overcoming problems associated with poorly designed sites.”

Bates notes that Bhavnani's background in cognitive psychology, which helped him understand the tendencies of people when searching for information, can be combined with traditional knowledge about search and retrieval. “The question becomes how can that be applied to the techniques in search and retrieval that have been around for many years, but have not been formulated as rigorously?”

Bhavnani's research has been funded by the National Science Foundation. •

Extras

Professor Daniel E. Atkins and the National Science Foundation Blue Ribbon Panel on Cyber-infrastructure, which he chaired, received coverage in various publications, including the trade publication *New Technology Week*. Atkins' panel proposes that the cyber-infrastructure available to scientists in all fields should be expanded, at a cost of perhaps \$1 billion a year. Atkins says that the proposed expansion of support for cyber-infrastructure “came from a perceived growing demand for advanced computation, coupled with large data repositories, collaboration services, online tele-instrumentation, and so forth, that was appearing organically from all the different research fields at NSF.”

Associate Dean C. Olivia Frost has been hard at work since January on numerous projects, perhaps none more important than the accreditation review for the American Library Association. She, along with faculty and staff under her guidance, have compiled more than 200 pages of supporting documents for a review team appointed by the ALA. In early 2003, a site visit committee of members from other accredited schools and colleges will come to SI to meet with faculty, staff, students, and alumni. Watch the SI Web site at si.umich.edu for more details.



Henry Chou was among the current students who offered their insights to visitors at the “Connect with SI” event.

Judy Lawson, director of academic and career services, knows that interest in the School of Information continues to grow, as evidenced by the yearly increases in those attending the fall open house for prospective students. This October, Lawson and her staff hosted 140 individuals on a Saturday afternoon at “Connect with SI: An Event for Prospective Students.” Just five years ago, 38 attended — and that seemed like a lot at the time. The guests were interested in both the master's and doctoral programs. With so many in attendance, the students were divided into two groups, the first time such a move was needed. That meant some fast shuffling by the faculty as they moved about from one room to another to give presentations. Along with the faculty, several current SI students volunteered to speak to the prospective students and pass along their insider knowledge about what life at SI is like.

Associate Professor Marshall Van Alstyne received a research grant from U-M's Office of the Vice President for Research for his project, “Information Diffusion Models with Application to Intellectual Property and Social Welfare.” The award is \$10,000 with an additional \$5,000 from SI.

Why Not Come to the Reception?

Smart people everywhere attend SI alumni receptions, such as this one we hosted at the Michigan Library Association conference in October. Among those in attendance were, from left, Juliane Morian (MSI '01), Stephanie Flinchbaugh (MSI '01), and Carol Treat Morton (MSI '02). Want to get in on the fun? See details about the American Library Association reception on the back page of this issue. See you there.

