

Welcome



Welcome to the IS Department at UMBC

*Dr. Andrew Sears, Professor and Chair,
Department of Information Systems*

Each time I sit down to write a new welcome message for our newsletter I find I have more encouraging news about the department and our students than I did for the previous issue. This time is no exception. The last quarter of 2006 and the first few months of this year have been filled with exciting new national academic rankings, as well as TV, radio, and print media attention focused on UMBC's IS Department. Recently, the media has regarded our department as a key source for discussing the state of the IT industry and how higher education plays a role in many of its emerging trends. We have also been fortunate to discuss the growing number of degrees we have awarded, our new M.S. and Ph.D. programs in Human-Centered Computing, and the impact that our researchers and graduates are making in the industry.

According to the January 2007 issue of *Computing Research News*, UMBC ranks # 2 in IT degrees awarded by major US research universities and UMBC continues to be one of the top producers of information technology graduates in Maryland. Our location in the Baltimore-Washington corridor affords access to many major federal and private R&D facilities, agencies, and businesses that provide excellent opportunities for internships, field work, and employment. We have nearly 1,100 undergraduate and graduate students enrolled in our programs who, along with our research faculty, examine, design, and evaluate information technologies to address the needs of a broad range of individuals and organizations. This makes our students true problem solvers and ideal employees for public and private sector organizations with significant IT requirements. On average, our undergraduates are currently finding noteworthy employment in three months or less with starting salaries that are comparable to or better than the national average for the IT field.

Our undergraduates continue to be in high demand for both full-time positions and internships with nearly 200 different organizations recruiting interns from our programs, and yet, many more openings remain vacant due to a critical need for more IS students, not just locally but on a national scale. Our

Master's students are employed by public and private sector organizations across the country and overseas. While many Master's students study here on campus, others enroll in our growing online MS program which provides students with completely online access to a comprehensive Master's degree in Information Systems. In just the last year, the online M.S.—developed and supervised by the same research faculty who teach here on-campus—has seen the number of new students enrolling in the program increase by 44%. Finally, our Ph.D. programs continue to grow. Our Ph.D. students are actively engaged in numerous research projects. Some of their recent accomplishments include presenting papers at numerous international conferences, being awarded the prestigious National Science Foundation's Research Fellowship, being awarded an IBM Ph.D. Fellowship which is also a very competitive program, and being invited to participate in several highly selective doctoral consortiums held in conjunction with important international conferences.

New to our department in the last two years are two assistant professors, one research faculty member and one lecturer, resulting in a total of 28 full-time faculty. Combined with our part-time instructors, we have a total of nearly 50 faculty. The primary research interests of most IS faculty fit into five core areas: Artificial Intelligence/Knowledge Management, Database/Data Mining, Decision Making Support Systems, Human-Centered Computing, and Software Engineering. While the department has outstanding researchers in each of these areas, we are particularly strong in both Database/Data Mining and Human-Centered Computing. Research funding continues to increase with the National Science Foundation (NSF) being the single largest source of external funding for IS research at UMBC. Additional support comes from government agencies (e.g., the National Security Agency, the U.S. Department of Education, and the National Institutes of Health), corporations (e.g., Google, IBM, Motorola), and foundations (e.g., the IBM Foundation for the Business of Government, Verizon Foundation).

With the support of a dedicated staff, IS faculty and students strive to advance the application of information technologies to address the needs of both individuals and organizations.

Once again, welcome to the IS Department at UMBC. I hope you will visit our Web site periodically to read about departmental news updates and activities as well as the accomplishments of our faculty and students.

News

Undergraduate News

John B. Schwartz Scholarship Awarded



Dana Douglas,
John B. Schwartz
Scholarship
award recipient,
Fall 2006.

The most recent awardee of the John B. Schwartz scholarship is Dana Douglas, a senior Information Systems major, who will graduate with honors in May 2007. A Center for Women and Information Technology (CWIT) Scholar, Dana will earn a B.S. with a minor in French and a certificate in Web

Development. Throughout her four years at UMBC, Dana has excelled academically, participating in a three week study abroad program in Montpellier, France, a summer internship at T. Rowe Price, an international research project in Leysin, Switzerland, and the Information Systems Department's summer Human-Computer Interaction Research Experience for Undergraduates.

In addition to her academics, Dana also has been involved in a number of extra-curricular activities and programs throughout the UMBC campus. She served as Treasurer and then President of the Society for Women and Technology and as a CWIT Fellow for the ESTEEM (Enhancing Science and Technology Education and Exploration Mentoring) Program. As a CWIT Fellow, she developed and taught a hands-on science and technology curriculum to local middle school students and acted as a positive female role model to young girls interested in the IT field.

Dana also served as a Choice tutor, mentoring and tutoring at-risk Baltimore City youth. Upon graduation, Dana looks forward to pursuing a career in human-computer interaction, focusing on the usability of different technologies. She also plans to complete a Master's in the near future and eventually become a teacher.

UMBC Business Technology Administration Graduates Now Extended Preferential Review for the College Park MBA Program

Information Systems undergraduates in UMBC's Business Technology Administration (BTA) program who are interested in continuing their education with a Master of Business Administration (MBA) degree may consider the University of Maryland—College Park MBA through new cooperative arrangements with UMCP's Robert H. Smith School of Business.

Undergraduates completing UMBC's Bachelor of Arts degree in Business Technology Administration will receive a preferential review for admission to the University of Maryland—College Park's part-time MBA program that is offered at several locations including Baltimore if they satisfy the following criteria:

- ▶▶ Completion of UMBC's MBA Preparatory Studies Certificate
- ▶▶ An undergraduate GPA of 3.0 or higher
- ▶▶ A GMAT score of 640 or higher
- ▶▶ Applicants must be employed full-time prior to admission to the MBA program

The Master of Business Administration program at College Park is considered to be the flagship MBA of the state's university system. Information Systems BTA undergraduates at UMBC will now have more direct graduate education track options to the College Park MBA, based initially on the exemplary academic credentials UMBC's BA in this field of study affords.

For more information, please email Tate Redding, Director of Undergraduate Programs at redding@umbc.edu.

Upcoming Speaker Events...

Please contact Barbara Morris at bmorris@umbc.edu for further details

- ▶▶ **April 12, 2007 / 11:30 a.m., Dr. Joe Coughlin from MIT.** *The IS Department is co-hosting this event with The Erickson School as Dr. Coughlin's research overlaps in Aging and Technology.* (https://web.mit.edu/agelab/people/people_faculty_josephcoughlin.shtml)
- ▶▶ **April 19, 2007 / 2:30 p.m., IS Distinguished Lecturer: Dr. Vic Basili from University of Maryland College Park.** *(start time subject to change)*

News

“Backpack to Briefcase” Brings IT Professionals and IS Undergrads Together

In collaboration with the Alumni Association and Shriver Center, the Information Systems Department held its annual Backpack to Briefcase networking session on Wednesday, October 25, 2006. Eight IS alumni returned to campus to talk about their professions and impart career advice with students currently in the major.

Bachelor of Science graduate Andrew Fichter said, “I came to this event while I was a student and found it very helpful and encouraging. It seems very worthwhile to return.” After meeting Ph.D. graduate Darniet Jennings, freshman Matthew Glassman stated, “One thing that struck me was that he was a young guy doing some really cool work!”

Students also gained some valuable insight into the job search process. Junior Paul Samuels picked up on the theme from the alumni that once you are in the workforce, you are “always interviewing.” “I learned that you should take initiative in assignments and ask for more work. You have the power to develop your own career path.”

The Information Systems Department would like to thank all attendees for donating their time, including the following alumni: Andrew Fichter, '04; Ketan Gurjar, '02; Bill Glover, '90; Scott Hechinger, '97; Darniet Jennings, '98, '99, and '03; Troy Laskoski, '03; Craig Martin, '84;



Backpack to Briefcase puts IS students in touch with “real world” IT professionals: Craig Martin, '84, Vice President, T. Rowe Price, discusses how IT education is an ongoing process and how a professional should always be preparing him- or herself for advancement within their career.

Dwayne Price, '87; and Phil Shockley, '04.

IS alumni interested in participating in a future Backpack to Briefcase are encouraged to contact Karen Lewis, IS Undergraduate Academic Advisor, at klewis@umbc.edu.

NSF Sponsors Summer Human-Computer Interaction (HCI) Student Researchers

Summer 2006 marked the successful completion of the Human-Computer Interaction (HCI) summer research program for undergraduates. Since it began in 2003, twenty-eight students from colleges as far away as Oregon, Puerto Rico and Maine in addition to a few Baltimore area students have participated. The program, directed by Dr. Jeffrey D. Campbell, was funded by the National Science Foundation as part of their Research Experiences for Undergraduates (REU) initiative.

The students worked with faculty and graduate student mentors on HCI research projects in areas such as computer supported cooperative work, cross-cultural differences in systems usage, varied computer interfaces (speech recognition, handwriting, Tablet PCs, other hand-held devices), information visualization, information retrieval, electronic commerce usability, and the issue of trust in online interaction.



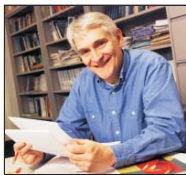
Summer 2006 REU participants after presenting their posters at the annual Summer Research Festival in the UMBC library. Left to right: Seth Puckett, Richard Field, Ben Beecher, Dana Douglas, Matt Morelli, Nick Kurlick, Jeremy Nevitt, Steve Ibara. Tawny Barin is not pictured.

To date, twelve papers have been published in journals or presented at conferences with a student as co-author. Another six articles formally acknowledged the contributions of the students' work leading to publication. UMBC selected two of this year's participants to represent the university at a display of undergraduate research in Annapolis, MD.

The REU site reaches students at other colleges who do not have research opportunities on their own campus and is perhaps best summed up in the words of the students. One said, “It has been an interesting, challenging, and ultimately rewarding summer that I’m sure will greatly influence my future decisions.”

News

Dr. John Carroll Speaks as the IS Department's "Distinguished Lecturer"



On November 27, 2006, Dr. John Carroll spoke to the UMBC Community on "Constructing Activity Awareness in Computer Supported Cooperative Work (CSCW)". Dr. Carroll was the IS

Department's Distinguished Lecturer for the Fall 2006 semester. His talk was focused on a contemporary approach to describing and theorizing about joint human endeavor is to posit "knowledge in common" as a basis for awareness and coordination. Recent analysis has identified weaknesses in this approach even as it is typically employed in relatively simple task contexts. We suggest that in realistically complex circumstances, people share activities and not merely concepts. We describe a framework for understanding joint endeavor in terms of four facets of activity awareness: common ground, communities of practice, social capital, and human development. We illustrate the sort of analysis we favor with a scenario from emergency management, and consider implications and future directions for system design and empirical methods.

John M. Carroll is Edward Frymoyer Chair Professor of Information Sciences and Technology at the Pennsylvania State University. His research interests include methods and theory in human-computer interaction, particularly as applied to networking tools for collaborative learning and problem solving, and the design of interactive information systems. His books include *Making Use* (MIT Press, 2000), *HCI in the New Millennium* (Addison-Wesley, 2001), and *Usability Engineering* (Morgan-Kaufmann, 2002, with M.B. Rosson). He serves on several editorial boards for journals, handbooks, and series and is Editor-in-Chief of the ACM Transactions on Computer-Human Interactions. He received the Rigo Award and the CHI Lifetime Achievement Award from ACM, the Silver Core Award from IFIP, and the Alfred N. Goldsmith Award from IEEE. He is a fellow of the ACM, IEEE, and HFES.

For more information about Dr. Carroll, please visit his website at <http://cscl.ist.psu.edu/public/users/jcarroll/Self/>.

Welcome New Faculty

Dr. Sreedevi Sampath joined the Information Systems Department as an Assistant Professor in August 2006, after earning her Ph.D. in Computer and Information Sciences from the University of Delaware under the advisement of Dr. Lori Pollock. Her Ph.D. research was on developing cost-effective techniques for user-session-based testing of web applications. Prior to the Ph.D., in 2002, Dr. Sampath received a M.S. degree in Computer and Information Sciences from the University of Delaware and a Bachelor of Engineering degree in Computer Science and Engineering from Osmania University, India in 2000.

Dr. Sampath's research interests are in the areas of software engineering, software testing, testing web-based applications, and program analysis. Software testing is a major bottleneck in the software development process. During product development, testing is often not comprehensive due to limited time resources. Incomplete testing can lead to huge losses for companies in the event of an unexpected failure. As new programming technologies arise, new techniques are required to ensure effective systematic testing. One such technology that has gained prominence in the past few years is a set of languages and software architectures for developing and deploying web-based applications. Dr. Sampath's research focus includes exploring solutions to improve the testability of web software and to improve understanding of the data involved in testing the applications and the web applications themselves.

In this current semester (Spring 2007), Dr. Sampath is teaching IS 436, Structured Systems Analysis and Design, which is considered the capstone course for the department's Bachelor of Science students.

Dr. Sampath is excited to join the Information Systems Department at UMBC and is looking forward to working with the students and her colleagues in the department.

News

Graduate News

GAANN Fellows

In addition to the fellows featured in the previous newsletter, we would like to welcome another, Richard Goldman.

Hi. My name is Rich Goldman. I graduated in May 2005 from UMBC with a B.S. in Computer Science and a B.A. in Interdisciplinary Studies (for the study of Materialism through the disciplines of Psychology, Philosophy, and Computer Science) and I am continuing my education at UMBC in the Information Systems Ph.D. program. Professionally, I have worked as an undergraduate researcher for Dr. Andrew Sears in the Laboratory for Interactive Systems Design for roughly 4 years. I also work as a researcher for The MITRE Corporation where I am involved with the development of both the infrastructure and interface for their experimental smart meeting room. My research interest centers around the design of Human-Computer Interaction paradigms for ubiquitous computing. Specifically, I currently plan to research algorithms for, and investigate the value of, automating the creation of multi-modal, personalized, cross-platform interfaces for interaction with ubiquitous services and applications. It is hoped that through this customizable, algorithmic approach that improved usability will result due to the increased consistency and predictability of the interfaces with which users will interact.

Outside of classes and my research I am involved in several campus organizations, namely Triangle Fraternity, The UMBC Libertarians, The Free State Project, Genesis Toastmasters, and the UMBC Macintosh Users Group. I plan to move to New Hampshire following the achievement of my Ph.D.

TIGER Website Aims to Benefit the Nursing Industry

Chiedozie (Fred) Unachukwu worked with Dr. Anthony Norcio on an independent study this past semester and developed the TIGER website. TIGER stands for

Technology Informatics Guiding Educational Reform. The TIGER initiative focuses on enabling practicing nurses and nursing students to fully engage in the unfolding digital electronic era in healthcare. The purpose of the initiative is to identify information/knowledge management best practices and effective technology capabilities for nurses. TIGER's goal is to create and disseminate local and global action plans that can be duplicated within nursing and other multidisciplinary healthcare training and workplace settings.



Dr. Anthony Norcio and Chiedozie (Fred) Unachukwu, December 2006.

The TIGER initiative is working to catalyze a dynamic, sustainable and productive relationship between the Alliance for Nursing Informatics (ANI), with its 20 nursing informatics professional societies and the major nursing organizations including the American Nurses Association (ANA), the Association of Nurse Executives (AONE), the American Association of Colleges of Nursing (AACN), and others which collectively represent over 2,000,000 nurses.

Vizer Awarded NSF Research Fellowship

Lisa Vizer, a doctoral student working with Dr. Andrew Sears, was recently awarded a prestigious National Science Foundation Graduate Research Fellowship. Through this extremely competitive fellowship program, the NSF provides three years of support for graduate study leading to research-based doctoral degrees for a cadre of diverse individuals who demonstrate their potential to successfully complete programs in disciplines relevant to the mission of the Foundation. Only 11% of the applicants were awarded fellowships this year and Lisa received one of just seven awarded in Human-Computer Interaction. Lisa is the first student from the department to receive a NSF Graduate Research Fellowship. Her research focuses on employing keystroke dynamics, traditionally used in security applications, to passively detect changes in users' cognitive and physical function.

Research

Focus on IS Faculty Research in Human-Centered Computing

Dr. Anita Komlodi

A number of our faculty conduct research in the area of Human-Centered Computing (HCC). Our department investigates HCC from a broad variety of perspectives. As a result, HCC research within the department addresses a diverse collection of interrelated research questions centered on the design, implementation, and evaluation of highly-usable interactive systems. Core specializations within the HCC area include: usability engineering (heuristic development/evaluation techniques), designing for accessibility (SIID), tutorial systems, search history interface design, information visualization, computer-mediated communication (especially instant messaging), mobile HCC, speech-based applications, and online communities.

Dr. Anita Komlodi's research interests focus on two main areas, diversity issues in users' interactions with technology and the design of user interfaces for information access. In the first area Dr. Komlodi is currently involved in the design and evaluation of an international, cross-language online community tool which allows children to make friends all over the world. Dr. Komlodi coordinates the evaluation of this novel online community with children, educators, and researchers in Argentina, Mexico, and Hungary. In a



Top row, left to right: Weimin Hou (doctoral student), Manpreet Kaur (doctoral student), Cornelia Carapcea (undergraduate student), Dr. Anita Komlodi (assistant professor), Deborah Krulak (teacher), Tawny Barin (undergraduate student). **Children, from left to right:** Sydney Haywood, Anna Fedder, Andrew Scholnick, Molly Biedleman, and Duncan Woodward.

related line of research she examined cultural differences in information seeking in electronic environments.

Dr. Komlodi and her team of undergraduate and graduate students from UMBC's Department of Information Systems work together with students and teachers from the Boys' Latin School of Maryland and the Roland Park Country School to evaluate an international, cross-language online community tool for children.

In addition to age and cultural variations in IT use, Dr. Komlodi is also interested in the role of gender impacting interactions with technology. She has recently finished the exploration of gender differences in IT use among middle school students. To promote gender equality among technology users, designers, and engineers, she has been actively collaborating with UMBC's Center for Women and Information Technology. Within this collaboration she leads the design and development of an international web portal on women and IT. She has also been involved with an IT educational program for middle-school girls in the Baltimore area. The National Science Foundation supported the projects described.

Dr. Komlodi's second area of interest centers on the design of user interfaces for information access. She examines users' information-seeking behavior and designs user interfaces that support this behavior. As an example, she has explored attorneys' information seeking habits and designed, prototyped, and evaluated user interfaces to support legal information searchers' memory while looking for information. She also explores the usability and utility of information visualization tools to support information seeking.

For more information about Dr. Komlodi's research, visit: <http://www.research.umbc.edu/~komlodi/>

Dr. Wayne Lutters

Dr. Wayne Lutters' general research interests, which is to deepen understanding of human interactions in socio-technical systems is in the following areas:

Research

- » Computer-supported cooperative work (CSCW)
- » Coordination mechanisms (e.g., boundary objects)
- » Ethnographic/Ethnomethodological studies of work
- » Online communities / CMC systems, esp. knowledge management & social maintenance
- » Collaborative technologies in the home
- » History of technology (impact on Internet design paradigms)

At the present, Dr. Lutters is on a two year appointment to fill the position of Program Director for Human Centered Computing (CISE/IIS) for the National Science Foundation.

Dr. Ant Ozok

Dr. Ant Ozok conducts research in the following areas:

Usability Testing and Evaluation

One of the important aspects of HCC is usability testing and evaluation. Usability testing and evaluation uses empirical methods to test user performance and satisfaction with computers and other environments. Using empirical research methods, useful design guidelines are produced to get the optimal user performance and satisfaction with computers, electronics and all kinds of other environments. Research can be conducted for different layers of population as different populations (different cultures, different age groups, etc.) have different expectations from computers and the World Wide Web.

Social Technology and Baby Boomers: Current Use and Future Expectations

This study looks to survey the use of technology for social interaction by Americans preparing to enter into retirement. The results of this examination will be compared to what technology is available and in use by the senior citizen population today. Results from this exploratory study will provide the groundwork for the development of online communities and other social technologies to support the next generation of senior citizens.

Determining the Acceptance and Need Levels Development of an Assisted Technology for Medication Intake of Assisted Living Residents

In the context of assisted living homes, medication management can be broadly defined as a regimen to ensure that the right medication is administered to the right resident at the appropriate time with the prescribed dosage. Providing access to a comprehensive medical management system by assisted living facility managers is not only a competitive advantage but may become a competitive necessity. Our research is an attempt to develop an understanding of the key issues effecting older adults in their adoption, non-adoption, and use of medication management technology. We will then propose a model for a "geriatric-centered" design of medication management for this quickly growing segment of the population.

Human Aspects of Security and Authentication in Networks (HASAN)

The Computer Research Association recently identified the usability (or lack thereof) of secure systems as a "grand challenge." Nowhere is this challenge more apparent than the usability of authentication systems that users must access on a daily basis, but have either usability or security weaknesses. This research examines the differences between different types of authentication systems from the perspectives of user capabilities, user preferences and usability. The different authentication systems studied include alphanumeric, graphical and biometric systems.

Dr. Anthony F. Norcio

Dr. Anthony F. Norcio's research interests are in the theoretical and applied areas of software/systems design, intelligent users interfaces (including voice systems), and health informatics. His current work concerns the design and construction of cognitive users models, performance models, and task models that can form the rules that underlie intelligent and adaptive interfaces to information

(continued next page)

Research *(continued from page 7)*

systems for dynamic decision-support environments. This research focuses on health systems, intelligent tutoring/help systems, air traffic control systems, and the internationalization of interfaces. This work relies heavily upon the use of cognitive theories of decision-making as well as fuzzy logic and neural networks.

Dr. Norcio has also studied alternative design methodologies for specifying complex software systems. This work examined design, code, test, and change data for constructing formal specifications of information hiding modules. He has also investigated the cognitive processes that are involved in designing, comprehending, and maintaining complex software systems. The purpose of these studies was to identify the cognitive decision-making processes that transcend any specific design methodology.

Dr. Andrew Sears

The majority of Dr. Andrew Sears' HCC research focuses on accessibility-oriented projects. As highlighted by the first project listed below, Dr. Sears employs a broad definition of accessibility which includes traditional disabilities associated with injuries or illnesses as well as what he refers to as situationally-induced impairments and disabilities or SIID.

Situationally-induced impairments and disabilities

As mobile computing becomes more pervasive, users enjoy increased flexibility in terms of where and when they record, retrieve, and interact with information. At the same time, the conditions under which these devices are used are becoming more variable, less predictable, and in many situations less hospitable. With increasing frequency, computers are being used when lighting is poor, noise is unpredictable, or when the user is engaged in other activities (e.g., walking, driving a vehicle, providing medical care, participating in a meeting). Several of Dr. Sears' research projects focus on the issues involved in developing effective computer systems for individuals experiencing such SIID. Like disabilities associated with an injury or illness, SIID exist when the

physical, cognitive, or perceptual demands placed on the user exceed their abilities. Unlike those disabilities associated with injuries and illnesses, SIID are temporary and more variable since they are associated with the environment in which the work is being performed or the tasks in which the user is engaged. Much of our research on SIID has focused on input-oriented activities including the use of speech recognition and stylus-based input while the user is on the move.

Designing accessible computer systems

Dr. Sears has been investigating speech-based solutions for individuals with disabilities for nearly a decade. While extensive research has focused on making speech recognition systems more accurate, Dr. Sears' research focuses on helping users be productive when using an inherently error-prone technology. Much of this research has been motivated by the challenges experienced by individuals with high-level spinal cord injuries.

Early studies focused on the processes by which users interact with SR systems and the difficulties users encountered during dictation-oriented activities (e.g., writing email, letters, memos, or papers). The underlying goal is to increase both productivity and user satisfaction. Our first significant study confirmed that individuals with high-level spinal cord injuries as well as traditional computer users with no physical impairments spent most of their time correcting errors in the text they dictated. Of particular interest was the fact that these users spent nearly one-third of their time just repositioning the cursor so they could correct recognition errors. While we were able to eliminate some of the errors users experienced when issuing speech-based navigation commands, we also redesigned the navigation commands to help users develop more effective strategies. When errors could not be eliminated, we focused on reducing the severity of the consequences users experienced when commands did fail. Our changes reduced failure rates dramatically, allowing users to spend much more of their time dictating text instead of correcting errors. Productivity increased by 40%.

Research

We also conducted a number of studies designed to provide insights into existing speech-based navigation solutions with the goal of enhancing these solutions such that navigation tasks could be completed more efficiently. Our studies produced insights into the efficacy of target- and direction-based navigation solutions for text documents, continuous- and discrete-cursor control solutions that work within any application, and grid-based navigation which can be used to position the cursor at any location on the screen. We also developed a novel anchor-based navigation solution. By carefully defining a set of navigation anchors, our anchor-based solution allows users to navigate within text documents using a small set of highly reliable commands. Initial studies suggest that, on average, users can navigate to recognition errors using fewer than two commands, our commands fail very infrequently, and anchor-based navigation may be more efficient than the state-of-the-art solutions available in commercial speech recognition systems.

Mobile data entry

Several projects are investigating the effectiveness of various techniques for data entry for mobile devices. Much of this work fits within our efforts to better understand SIID since mobile devices are used in highly variable environments and can be used while users are on the move. Our research on mobile data entry includes efforts to better understand when and how speech-based data entry may be effective, several projects investigating stylus-based input techniques including both soft keyboards and gesture-based solutions, and a series of studies investigating the effectiveness of mobile phone-based solutions. One noteworthy project involved a series of studies conducted in both the U.S. and China which resulted in a more effective solution for Chinese text entry. Our focus was on redesigning the keypad graphics with our design being adopted as the standard for all new Motorola mobile phones for the Chinese market. **END**

Kudos

The following is intended to recognize the many research-oriented activities and accomplishments of our faculty and students. The contributions are based on what individuals view as being noteworthy accomplishments based on where they are in their careers. As a result, this list only represents a subset of the activities and accomplishments of our faculty and students.

Funding

Andrew Sears and Aryya Gangopadhyay (working with Don Norris from Public Policy) are engaged in three projects dealing with various issues that involve voter registration, campaign finance, and election candidates. These projects are supported by more than \$250,000 of funding from the Maryland State Board of Elections.

Andrew Sears received approximately \$27,000 to support a consortium on IT accessibility which was held in conjunction with the Assets 2006 conference.

Ant Ozok: Exploring User Acceptance Issues Concerning a Proposed Automated Medication Management System in Assisted Living Homes, \$12,500, *Erickson Retirement Communities*.

Ant Ozok, Andrew Sears, Anita Komlodi, Anthony F. Norcio: NSF MRI: Acquisition of Equipment to Establish a Research Infrastructure to Support HCI and UA Research, \$275,000 total cost for 3 years, *National Science Foundation*.

"Comparing Software Development Approaches", granted to Dr. Carolyn Seaman from Xerox Corporation. \$20,000 per year for 3 years.

Publications

Peer Reviewed Journals

Shibnath Mukherjee, Zhiyuan Chen, Aryya Gangopadhyay. A Privacy Preserving Technique for Euclidean Distance-Based Mining Algorithms Using Fourier-Related Transforms. *In VLDB Journal*.

Navin Kumar, Aryya Gangopadhyay, George Karabatis, Sanjay Bapna, Zhiyuan Chen. Navigation Rules for Exploring Large Multidimensional Data Cubes. *International Journal of Data Warehousing and Mining*.

Guo, Z., G.J. Koehler and A.B. Whinston. 2007. A Market-Based Optimization Algorithm for Distributed Systems. *Management Science*, forthcoming.

Research

Guo, Z., F. Fang and A.B. Whinston. 2006. Supply Chain Information Sharing in a Macro Prediction Market. *Decision Support Systems*, 42(3):1944-1958.

Peer Reviewed Conferences

D. Zhang, G. Karabatis, Z. Chen, B. Adipat, L. Dai, T. Zhang, Y. Wang. Personalization and Visualization on Handheld Devices. *The 21st Annual ACM Symposium on Applied Computing*, Dijon, France, April 23 -27, 2006.

Adipat, B. & Zhang, D. (2006). Personalized and Tree-Navigation Interfaces for Mobile Web Applications. *Proceedings of the 2006 Americas Conference on Information Systems (AMCIS 2006)*, Acapulco, Mexico, August 4-6.

Goodall, John R., Wayne G. Lutters, Penny Rheingans, and Anita Komlodi. "Focusing on Context in Network Traffic Analysis" *IEEE Computer Graphics and Applications*, (26:2), 2006, pp. 72-80.

Kaur, Manpreet, Weimin Hou, Wayne G. Lutters, Anita Komlodi, Lee Boot, Claudia Morrell, Shelia R. Cotten, A. Ant Ozok, and Zeynep Tufekci. "My Mom is a Cell-Phone Illiterate" – The Influence of Parental Perceptions on Pre-Adolescent Attitudes Towards ICT." *Proceedings of the 6th ACM Grace Hopper Celebration of Women in Computing*, ACM Press, 2006.

Gurzick, David and Wayne G. Lutters. "From the Personal to the Profound: Understanding the Blog Life Cycle." *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, ACM Press, 2006, 827-832.

Hou, Weimin, Manpreet Kaur, Anita Komlodi, Wayne G. Lutters, Lee Boot, Claudia Morrell, Shelia R. Cotten, A. Ant Ozok, and Zeynep Tufekci. "Girls don't waste time": Pre-Adolescent Attitudes toward ICT." *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, ACM Press, 2006, pp. 875-880.

Tari, F., Ozok, A., and Holden, S. (2006): A Comparison of Perceived and Real Shoulder-Surfing Risks between Alphanumeric and Graphical Passwords. *Proceedings of SOUPS 2006 Symposium on Usable Privacy and Security*.

Hou, W., Kaur, M., Komlodi, A., Lutters, W., G., Boot, L., Cotten, S. R., Morrell, C., Ozok, A., and Tufekci, Z., (2006). "Girls Don't Waste Time": Pre-Adolescent Attitudes toward ICT. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, ACM Press, Montréal, Canada.

Other faculty accomplishments

Andrew Sears was elected Vice Chair of the ACM Special Interest Group on Accessible Computing. He will serve a term from July 1, 2006 through June 30, 2009.

UMBC Information Systems Department Chair, Dr. Andrew Sears, was recently named Co-Editor-in Chief for a new ACM journal. The appointment teams Sears with Vicki Hanson of IBM's T.J. Watson Research Center to co-edit the journal "Transactions on Accessible Computing."

The quarterly peer-reviewed journal's inaugural edition—both print and online—is slated for a fall 2007 launch, and will publish refereed articles addressing issues of computing as it impacts the lives of people with disabilities. TACCESS provides a technical forum for disseminating innovative research that covers either applications of computing and information technologies to provide assistive systems to persons with disabilities, or investigations of computing technologies and their use by persons with disabilities.

Drs. Sears and Hanson head an editorial board that comprises more than 20 Associate Editors from around the globe whose assignment primarily focus on reviewing manuscripts being considered for publication in the journal. "Transactions on Accessible Computing" will serve as a resource for researchers, authors, editors and reviewers with a particular interest in assistive technologies and universal access in relation to the needs of people with vision, hearing, or other sensory disabilities; motor disabilities; memory, learning, reading, and cognitive disabilities; speech and language disabilities; and aging.

An official call for papers has been announced. For more information, visit "Transactions on Accessible Computing" online at <http://www.acm.org/pubs/taccess>.

Invited talk @ Stanford Lutters, Wayne G. "Following the Fingerprints: Sensemaking and Processes of Recontextualization in Knowledge Management," Department of Management Science and Engineering, *Stanford University*, Palo Alto, California, USA, March, 2006..

Lutters, Wayne G., AC & session chair @ CHI'06 [Program Committee](#), Associate Chair, Technical Program, *ACM Conference on Human Factors in Computing Systems (CHI)*

Lutters, Wayne G., [Invited Session Chair](#), "Privacy," *ACM Conference on Human Factors in Computing Systems (CHI)*

Research

Ozok, A.: ICAE 2008, the Second International Conference on Applied Ergonomics, Las Vegas, NE, July 13-17, 2008, Member, Social and Organizational Ergonomics

Other student accomplishments

Goodall, John R. "Visualizing Network Traffic for Intrusion Detection," *ACM Conference on Designing Interactive Systems*, State College, PA, USA, June, 2006.

Undergraduate Research Award (\$1500) and URCAD presentation - Das, Sumita, "Improving Software Maintenance Through Better Documentation," *UMBC Undergraduate Research and Creative Achievement Day*, Baltimore, MD, USA, April, 2006.

Ph.D student Medha Umarji was offered a full-time Research Assistant position this past summer at the University of California – Irvine, in the lab of Dr. Susan Sim. Medha conducted studies of the searching behaviors of software developers.

Ph.D student Susan Mitchell presented a short paper at the 19th Conference on Software Engineering Education and Training in Hawaii in April. The paper is entitled "Assessing the Value of Computer Science Course Material Repositories" and is co-authored with Dr. Wayne Lutters.

Ph.D student Susan Mitchell presented a poster at the 22nd Annual Eastern Conference of the Consortium for Computing Sciences in Colleges in Fredericksburg, VA, in October 2006, entitled "Assessing the Value of Computer Science Course Material Repositories: A Work in Progress"

Yunfang Feng article "The Value of Information Sharing in the Presence of Supply Uncertainty and Demand Volatility" was accepted by the International Journal of Production Research.

Tari, F., Ozok, A.A., and Holden, S.H., (Accepted) A Comparison of Perceived and Real Shoulder-surfing Risks between Alphanumeric and Graphical Passwords (2006 Symposium on Usable Privacy and Security (SOUPS))



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