

Spring

Missouri University of Science and Technology Computer Science Department

2010

Newsletter

CS Department on Facebook!



You knew the word “bling” wasn’t cool when you heard your mother say it and now that the Computer Science Department finally has its own Facebook page, it’s probably safe to bet that Facebook has jumped the shark as well.

We want you! We really do. One of the most frustrating things about our jobs as faculty and staff is watching some of our favorite students disappear into the sunset after graduation. We’ve primarily created this page for our alumni. Now, please don’t immediately jump to conclusions and think that this means we will use it to pilfer your money, because while that is certainly

true, what we really want is your involvement. Imagine how lost you were as an undergraduate. Now imagine what life could have been like if you had alumni mentors that you frequently interacted with. You would then know about life after graduation, the things you could do to prepare, and you would have all kinds of contacts. Suddenly life after graduation is a lot less mysterious!

We are putting a lot of effort into Facebook because we want this kind of relationship. We want alumni to attend our events and our students’ events. We want to see them more involved professionally and socially. Facebook is a great tool to help us accomplish these tasks.

So, look us up and become a fan of Missouri S&T Computer Science!

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**2010 PHONATHON
DATES:
Jan. 31, Feb. 1-4 & 8-11**



CHAIR'S MESSAGE

Greetings from Missouri S&T's Department of Computer Science and welcome to the spring 2010 edition of the CS Newsletter. Calendar year 2009 has been another exciting period and a milestone for the CS department.

2009 was marked for an ABET accreditation visit. To maximize the chance of a successful outcome, a committee was set up as early as fall 2008 to lead, synchronize, and document our efforts. Mid October 2009, an ABET team visited our department. We are expecting to receive the formal evaluation result in January 2010. At this stage, I am not authorized to share the informal results with you; however, it was my personal impression that the ABET visit was a success and I'm confident the formal report will bear this out, adding yet another seal of approval to our path in improving the department and our commitment to our students.

In spite of the stock market meltdown, the state of Missouri's shortfall of revenue, and the financial difficulties that the nation faced, we continued our progress on many fronts. Here I will highlight some of our achievements. Two years ago we raised the bar and expectations of the department, its faculty, students, and alumni, and defined several goals:

1. Improve the quality of the program,
2. Improve the quality and quantity of students, and
3. Increase productivity.

To pursue these objectives, we upgraded both the undergraduate and graduate curriculums, made the faculty workload model more equitable and flexible, and defined a new administrative paradigm. After just one year, the effect of these changes has been strikingly evident: according to the exit interview of senior students, our students are more satisfied than ever!

A. Enrollment: Student enrollment in the CS department grew at a faster rate than the university. In fall 2009 relative to the previous year, at the undergraduate level, enrollment growth was 10% (university's enrollment growth was 6%). At the masters level, enrollment growth was 10% and at the PhD level we grew more than 100%. Finally, the growth in our distance program was also more than 100%. These increases were not achieved at the expense of lowering our admission requirements. On the contrary, we raised our admission standards, i.e., GPA, ACT score, SAT score, and GRE score.

B. Course offering: In May 2008, in response to our students' strongly stated wish, I promised to strive for having all our lecture courses for CS majors taught by faculty members only. Thanks to our success in hiring additional faculty members and better resource management, I am glad to report that starting next year we are poised to achieve this goal. In addition, in fall 2009, we offered more upper level and graduate level courses than previous years without sacrificing the frequency of offering lower level courses.

C. Productivity and scholarly activities: Our research productivity in terms of funded research and publications continues to grow. At the moment, our faculty members are involved with 31 funded research projects supported by the National Science Foundation (NSF), U.S. Department of Education (DOE), U.S. Air Force, U.S. Army, U.S. Department of Defense (DOD), the Computing Research Association (CRA), Boeing, and the University of Missouri System. More than 90% of our PhD students and a significant number of our MS students are financially supported through these efforts.

CHAIR'S MESSAGE continued

D. Space: Space has been a major problem for the department and it became even more problematic because of the drastic increase in the number of funded research projects and the growth of our PhD program. To partially resolve our space problem and at the same time take a step toward establishing pervasive computing as an emphasis area, a proposal was set forth to remodel room 208 of the CS Building as the home for our new “pervasive and mobile computing” laboratory. I personally would like to thank Chancellor John Carney and Provost Kent Wray for their understanding and financial assistance in this matter. The remodeling started in early May 2009 and our new “pervasive and mobile computing” laboratory has been fully operational since fall 2009.

E. Our short term Goals: The department is planning to launch three fund raising campaigns. The goals are to:

1. Establish an annual distinguished lecture series,
2. Establish three Ph.D. Fellowships to annually recruit and support three highly qualified incoming students from underrepresented groups (e.g., female or ethnic minority) , and finally
3. Build a multipurpose multimedia technology space.

These campaigns expand our graduate program, allow us to offer more distance education courses, and enhance our graduate certificate program and distance master degree.

The total budget for the aforementioned campaigns is estimated at \$1,000,000. We are heavily counting on our alumni and industrial partners to support these campaigns!

In April, four outstanding alumni joined our computer science academy and advisory board: Cindy Tang, the founder and former chair of the board for Insight Industries Inc., was inducted into the Missouri S&T Academy of Computer Science (ACS), and Kent Lynn (IBM), Matt Dissinger (Garmin International), and Amanda Mechlin (Cerner) became members of the Missouri S&T Computer Science Advisory Board. We would like to welcome them and we are looking forward to their active contributions to the department. The 2009 CS academy meeting was held on April 16, the 2009 CS student award banquet was held on April 23, the 2009 CS advisory board meeting was held on April 24, and the 2009 CS picnic was held on September 12.

Finally, the computer science department is humbled by and deeply grateful for the financial support of its alumni and corporate partners.

As always, we are eager to hear from you. Please take a moment to complete the Alumni Survey at: http://cs.mst.edu/alumnicorporationsandpartners/Alumni_Survey.html. If you are an employer of our graduates, we would be grateful if you could fill out the Employer Survey at: http://cs.mst.edu/alumnicorporationsandpartners/Employer_Survey.html.



Ali Hurson
Department Chair, Professor

One inducted into Missouri S&T's Academy of Computer Science

One Missouri University of Science and Technology alumni was inducted as a member into the Missouri S&T Academy of Computer Science during the group's banquet and induction ceremony in Rolla on April 16, 2009.

The academy honors outstanding computer scientists for their contributions to the profession and their involvement with Missouri S&T students and faculty. The academy also serves as an advisory group to the computer science department. The web site for the Missouri S&T academy is: <http://web.mst.edu/~csacdmj/>.

New member is:



Cindy Tang is the founder and former chair of the board for Insight Industries Inc., in Platteville, Wis. Insight started as an entrepreneurial software engineering consulting firm in 1987. The company is one of the largest software engineering companies in Wisconsin and was recognized as one of the top women-owned businesses in Wisconsin for seven years. Included among Insight's accomplishments is the development and testing of critical flight instrumentation used in many commercial airliners today. Insight became an employee-owned company in the late 1990s.

Cindy is very active with S&T and in her local community. She served as president of the S&T Board of Trustees and continues active participation on that board. Cindy was a member of the Campaign Organizing Committee and was invited to speak to the Chancellor's Leadership Class. She also served on the S&T Management Systems Advisory Board, and is a member of the Order of the Golden Shillelagh. Cindy is an Honorary Knight of St. Patrick and received the Alumni Achievement Award in 1999. Cindy was recognized as an Honored Founder in 1994. In 1997, Cindy endowed the Cynthia Tang Missouri Professorship of Computer Engineering in the electrical engineering department. She has also aided in the development of the S&T management systems discipline through her active participation and funding of scholarships. Within her community, Cindy is a member of the University of Wisconsin-Platteville Foundation. She has served on the board of directors for the Chamber of Commerce and Women in Engineering Advisory Board at UW-Platteville. Cindy is a founding board member of the Platteville Main Street Program, which is devoted to economic development of Platteville. Cindy also devotes time as an advocate and sponsor of programs for senior citizens.

Cindy received her bachelor's degree in economics from S&T in 1985 and an MBA from Drury University in 1987.



Computer Science Advisory Board

This year, the traditional CS Awards banquet and the Advisory Board meeting were held on April 23-24, 2009. Terry Bollinger from “The Defense Venture Catalyst Initiative (DeVenCI)” was our keynote speaker and delivered an interesting talk entitled “The End of Feudalism: Free-Market Software in the New Millennium”. During the banquet, many scholarships and a number of door prizes were awarded to students. We wish to extend our sincere thanks to the CS Advisory Board members, CS alumni, and corporations for sponsoring tables, providing scholarships and door prizes for this event.

In addition, to the regular board members, Terry Bollinger was invited to attend the board meeting.

This year, we had four new advisory board members:

- Louis Clark Jr. from Monsanto,
- Matt Dissinger from Garmin,
- Kent Lynn from IBM, and
- Amanda Mechlin from Cerner.

The Board meeting had a full agenda ranging from the software engineering degree to the new department workload policy. The discussion topics included: (i) Software Engineering Certificate and advanced degree in Lockheed Martin, (ii) upcoming ABET, (iii) A new way to develop and offer CS courses, (iv) new faculty workload, and (v) remodeling and strategic planning. Drs. Dan Lin and Wei Jiang made presentations about their research in the areas of Moving Objects Databases, Policy Management and Analysis, and Privacy-Preserving Collaborative Computing. The board members made many practical suggestions and unanimously endorsed the new workload policy. We appreciate the time and dedication of the Board members in contributing to our continuous efforts to improve the quality of education in the Department. Their perspectives provide valuable insights to the Department as we develop and revise our academic and research programs. If you are interested in serving on the CS Advisory Board, please send us an e-mail at csdept@mst.edu, along with a short bios.

CS Advisory Board Members (2008-09): Ken Brenneke (Boeing), John M. Brown (Purina), Robert Byrne (Boeing), Louis Clark Jr. (Monsanto), Matt Dissinger (Garmin), John Hock (IBM), Jeff Herzog (Maryville Technologies), Herb Krasner (Krasner Consulting), Jim Lahm (Independent Consultant), Jim Leonard (Boeing), Kent Lynn (IBM), Kent Lynn (IBM), Bob Perrey (MasterCard International), David Schade (AT&T), Curt Schroeder (Lockheed Martin), Karen Squires (Pearson), John Stone (UIUC), Amanda Mechlin (Cerner) and Juan Vargas (Google).

The Advisory board website is: <http://cs.mst.edu/alumnicorporationsandpartners/industryadvisorycomm.html>.



COMPUTER SCIENCE AWARDS BANQUET

The Eighth Annual Missouri S&T Computer Science Department Awards Banquet held on April 23, 2009 brought students, faculty, staff, alumni, and friends together for an evening of food, fun, and awards. A short reception preceded the banquet. Following a delicious meal, Mr. Terry Bollinger, Department of Defense, DeVenCI, and a CS Alumni, presented a talk entitled "The End of Feudalism: Free-Market Software in the New Millennium". The evening concluded with the distribution of fabulous door prizes donated by several of the banquet sponsors. In addition to door prizes, banquet sponsors purchased tables for the event. The money from table purchases made it possible for all Computer Science majors to attend the banquet free of charge. The 2010 Computer Science Awards Banquet is scheduled for April 15, 2010. If you are in the area, we would be delighted to have you join us. If you and/or your company would like to participate in the 2010 banquet, please contact Rhonda Grayson at rhondag@mst.edu or Dawn Davis at dawnd@mst.edu. Additional information about the banquet can be found at: <http://cs.mst.edu/departement/awards.html>.

Sponsors for the event included:

Accenture
A Slice of Pie
Alex Pizza
Blossom Basket
Boeing Company
Cerner
Coachlite Lanes
Dairy Queen
El Maguey's
Garmin
Imo's Pizza
Keys Sport
Lambiel

Lee's
Maid Rite
Matt's Steak House
Microsoft
Monsanto
Panera's
Pearson Educational
Pizza Inn
Purina
Shoney's
Sirloin Stockade
Something Special
Sonic

Steak n Shake
Sunny Wall
Sunsations Tanning
Tan Oasis
Tan-Fastic Tan Center
Tara Day Spa
The Centre
The Hickory Pit
Tradebot
Triad's
Missouri S&T Bookstore
University Bookstore
US Steel



The Second Annual Computer Science Department “Friends and Family Picnic” Made Possible by Tradebot Systems

Thank-you to everyone who came out to this year’s picnic! It was a blast! We had over 150 students, friends, family, and faculty sign up for this year’s event at Schuman Park. The weather could not have been more perfect. We had an outstanding line-up of food; thanks to Dawn Davis and Rhonda Grayson for setting everything up. Once everyone arrived, ate lunch, and settled in, the games began! We started off with a big flippy cup tournament. Six rounds and a lot of non-alcoholic drinks later, a graduate student team succeeded in winning the first ever Picnic Cup! Immediately after the tournament we headed over to the diamonds for some kickball. It was a lot of fun and if you are reading this paragraph then we would really like to have you at our next picnic. Please email us (buechler@mst.edu) or join our Facebook page so we can contact you to let you know when our other social events are coming up. We’d love to have you around!





Alumni News

Neil Smith, CS '68, my son, Morgan Smith, Cer. Eng. 2004, was married in May 2008 and now resides in Washington, D.C. My daughter, Veronica Smith, was married in December 2008 and now resides in Arlington, VA. He is working as a computer programmer in Jefferson City rewriting Missouri's welfare system.

Andy Ray Mills CS, '89, got engaged to Natalia Olivas, a fellow Missouri S&T graduate, on October 31, 2008. They are busily planning their wedding.

Charla C. Dzedzic, CS '83, daughter Rose is a sophomore at College of William & Mary in Virginia & son Drew is a junior at St. Louis University High School.

Anthony Edwards, CS '94, and wife Amy, had a baby boy, Alexander Grant, on July 27, 2007. He joins sister Audrey Grace.

Scott Sigman, CS '99, associate professor of mathematics and computer science at Drury University in Springfield, MO, was elected regional representative for the Central Plains Region of the Consortium for Computing Sciences in Colleges.

Kristen Louise Loesch, CS '07, got engaged to James Moynihan, a fellow Missouri S&T graduate.

Phyllis Altheide, CS '85, has worked for USGS for 25 years, and her work on geospatial standards has taken her around the world. She has two children. Martha is a senior in High School this year and her son Paul is in 6th grade.

Kenneth C. Savells, CS '74, was awarded one of ten honorary professional degrees that was awarded during the December 20, 2008, commencement.

Matt Fischer, CS '99, and wife Stephanie, had a baby boy, Aidan Thomas, on September 9, 2008.

Jean Holley, CS '81, was awarded the Robert V. Wolf Alumni Service Award, this award is presented in memory of Robert V. Wolf, ME '51, MS ME '52, one of the university's most dedicated alumni. It recognizes the dedicated service of alumni and friends to the university and to the Miner Alumni Association.

William K. Brune, CS '73, is still working for Hewlett-Packard in HP-IT Data Center operations. He had a wonderful time at Homecoming last year and looks forward to this year's.

John A. Lindstrom, CS '73, is nearing retirement. He is using his RV more, and enjoys visiting Mexico and warmer parts of the United States in winter.

Vicky (Dickerson) Maurseth, CS '74, and her husband Jerry are serving in Afghanistan. Her husband Jerry is a brigade engineer for Task Force Warrior and Vicky is an engineering tech for the Afghanistan Engineering District.



Alumni News continued

Scott McBrady, CS '03, and wife Liz, had a girl, Maura Anne on September 26, 2008.

Matthew S. Garrison, CS '08, was married on June 13, 2008, to Amanda T. Conigliaro. The couple lives in New Orleans.

Two faculty members of Missouri S&T's Department of Computer Science received the 2007-2008 Missouri University of Science and Technology Outstanding Teaching Award



Congratulations to

Dr. Jennifer Leopold and Dr. Daniel Tauritz

Missouri S&T's Dr. Maggie Cheng received promotion to Associate Professor of Computer Science with Tenure effective September 1, 2009.



Congratulations

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MATT BUECHLER This is going to be the biggest mistake of your life. Are you sure about this? Have you been psychologically evaluated? Please reconsider.

Sometimes a guy can be surprised by the things his mother whispers to his fiancé. In my case, there was no whispering. My mom said this openly at a dinner table. Not in jest, but in earnest concern for her future daughter-in-law's well-being. I guess being married to my father for 30 years can put a damper on a gal's optimism.

Regardless, the latest and greatest thing that is happening in my life is that I am getting married! The girl in question is Nikki Thole. Our story is basically the movie "Revenge of the Nerds" come to life. In the years before we met, we led entirely different lives. In high school while she was busy being voted prom queen; I was successfully leveling up my Final Fantasy characters. In college while she was partying and earning her All-American title as a division I soccer player for Mizzou; I was spending 36 hours at a time programming in the Linux labs. Needless to say, the 27 years of her life before she met me were wasted. In the end, it was our love for the outdoors that brought us together.

We are set to get married on the Hawaiian islands where we plan to spend two weeks hiking, surfing, scuba diving, and kayaking.

DR. SRIRAM CHELLAPPAN is busy conducting research on various aspects of networking and security of Internet, Sensor Networks and Vehicular Networks. His research is funded by Missouri Research Board and University Transportation Center. He is also busy advising his new Ph.D. and Masters students on various research topics. He enjoys teaching courses in Operating Systems, Computer Networking and Advanced Network Security.

DR. MAGGIE CHENG was promoted to associated professor with tenure! This year she served as the general chair of IEEE IPCCC conference and as a technical program committee member of IEEE INFOCOM. She teaches algorithmics classes and network classes, as usual.

DR. FIKRET ERCAL is collaborating with faculty from Biological Sciences and conducting research in the area of 'gene family and microRNA identification in several species including Arabidopsis'. He and his colleagues have published several papers in this area in respected Bioinformatics journals. Dr. Ercal is also co-supervising a Ph.D. student in the area of "Secure and Adaptable Energy-efficient Sensor Networks for Infrastructure Monitoring" which is funded by DOE.

DR. ALI HURSON During the last calendar year besides his administrative duties, Dr. Ali Hurson introduced and offered two new courses with distance components in the CS curriculums, namely: "Heterogeneous and mobile databases" and "Introduction to High Performance Computer Architecture" in spring and fall semesters, respectively.

He also graduated one of his PhD students at Penn State University working in the area of "SECURITY in MOBILE AD HOC NETWORKS". He is continuing part of his research at Penn State in the area of "active sensor networks and interoperability of sensor networks". At Missouri S&T, he recruited two PhD students working in the areas of "data broadcasting in traffic control" and "application of "global information processing in education". Finally, he set up the "Pervasive and Mobile Computing Laboratory" and proposed the area of "Pervasive and Mobile Computing" as an emphasis area in the CS graduate curriculum.

He is also continuing to work with his students at Penn State University on his \$2,220,076 NSF Pervasively Secure Infrastructures project. One of his PhD students successfully defended his thesis entitled, "A SECURITY FRAMEWORK FOR MOBILE AD HOC NETWORKS".

DR. WEI JIANG came to Missouri S&T a year ago. Currently, he has one Ph.D. student and serves on several Ph.D. thesis committees. He usually teaches distributed systems and information security related courses. Next fall, he will offer a new course focusing on recent development in privacy-preserving data mining, data integration and information retrieval.

DR. HUZefa KAGDI is conducting research work in the software evolution and maintenance aspects of software engineering. He continues to publish papers in peer-reviewed international venues and serve on a number of program committees. He is grateful to the University of Missouri Research Board for financially supporting some of his research efforts. He taught CS 206 twice in AY 2008-09 and is currently teaching a graduate course on software evolution and maintenance (first ever offering here). He was invited to participate in an NSF sponsored workshop on Software Engineering Disciplinary Commons (a monthly event in Edwardsville, IL).

DR. JENNIFER LEOPOLD is teaching the Compiler Construction, Programming Languages & Translators, and Bioinformatics courses. She recently received a Missouri S&T Outstanding Teaching Award for the previous academic year. Her current research interests are

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ontologies and automated spatial reasoning in 3D.

DR. DAN LIN has completed her first year at Missouri S&T. She is establishing her research group. Now she has three PhD students and several master students working on various research topics. She teaches database courses and will offer a new course on advanced topics in spatial-temporal databases in the coming spring. She is also busy with new missions, being the advisor of two student associations: IEEE Computer Society student branch and Association for Computing Machinery-Women.

DR. FRANK LIU continues to work on an innovative consensus building and conflict resolution method based on intelligent computational argumentation technique. He has been developing a web-based intelligent argumentation system for supporting collaborative decision making based on this method. It may find applications in many domains, such as collaborative software development. He also works on a couple of sponsored projects in the area of software applications. Recently, he, as a co-principal investigator, was awarded a grant of \$209,550 from the Advanced Military Equipment Inc to work on an advanced landmine detection simulator based on his research on motion tracking technology developed from his previous grants from US Air force and Boeing Co. In addition to conducting research, he teaches software testing and quality assurance, software requirements engineering, and advanced software engineering classes, which attract many distant learning graduate students.

DR. SANJAY MADRIA is directing the W2C (Web and Wireless Computing) Lab, and is currently supervising seven PhD students in the area of mobile and secure sensor networks. He continues to teach 238, 437, and 467 classes in the area of databases, web and wireless computing which continuously receiving overwhelming responses from graduate and undergraduate students. He has been invited for IEEE Distinguished Seminars, key notes and invited talks internationally. He was awarded Air Force Research Lab's summer faculty fellowship in the summer of 2008 and 2009 where he spent 10 weeks in Rome, NY for the collaborative research project.

DR. BRUCE McMILLIN led the recent ABET accreditation report and you will be getting *new* alumni surveys that reflect the department's revised goals. He is active in computer control and cyber security aspects of renewable energy systems. On a personal front, he is trying to learn French "Je ne pas compris!".

DAVE MENTIS is still teaching the introductory C++ service course and labs (CS 74 & CS 78) as well as the FORTRAN service course and lab (CS 73 & CS 77). Dave's looking at some possible Java courses for the future.

Dave's wife, Doyla, is still teaching in Missouri S&T's Education department. Dave's daughter, Dava, is still pursuing a Chemistry major with emphasis in pre-med. Dave's grandson, Layton, is really enjoying their farming operation, which has expanded recently with the acquisition of more land.

DR. ANN MILLER, Cynthia Tang Missouri Distinguished Professor of Computer Engineering, holds a joint appointment with CS. Dr. Miller's Trustworthy Systems Laboratory gives students hands-on experience with high-speed routers, switches, and hubs in order to configure networks and subnets. The stand-alone network also allows students to work in attacker-defender teams. She is also Director of Missouri S&T's Center for Critical Infrastructure Protection and Associate Director of Missouri S&T's Systems Engineering Program. She continues to serve on several NATO committees and task groups which provide opportunities for international travel; on a personal note, the travel allows her the opportunity to savor many different cuisines.

CLAYTON PRICE this semester, Clayton Price finds himself teaching a full load plus some. CS 01, 53, 228, and 328 are keeping him hopping! He's looking forward to the spring semester. He says that the new group of freshmen look like a promising crop of enthusiastic comp sci students, ready to take on the world's problems for solving. He reports that the enrollment in CS 53 is rising rapidly since EE now requires it for their curriculum. CS 228 always has a high demand and CS 328, Mr. Price's most interesting and demanding course, always attracts the very best students in the department. The positive contributions by our young, new faculty help to make our department the best place to work on campus.

On the home front, Clayton has completed several projects on the house including a refit of all the windows and a complete rebuilding of a much more expansive deck. His butchering efforts have expanded to include lambs once a year, accompanying the annual beef processing with close friends. He has been raising his own untainted beef and garden vegetables for 30 years now.

DR. CHAMAN SABHARWAL continues to teach Graphics (CS358), Robotics (CS 345), Java GUI, Visualization (CS 342). This fall 2009 he taught Programming Languages and Translators (CS258). In the spring of 2010, he will teach a course: Numerical Methods (CS 228). He was the Multimedia & Visualization track Chair of ACM Symposium on Applied Computing 2008 in Brazil. Dr.

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Sabharwal still commutes back and forth from St. Louis.

DR. JAGANNATHAN (JAG) SARANGAPANI Rutledge-Emerson Distinguished Professor of Electrical and Computer Engineering, holds a joint appointment with CS. Dr. Sarangapani's students work on the development of novel networking protocols for wireless ad hoc and sensor networks with both commercial and DoD applications. He directs the Embedded Systems and Networking Laboratory and this laboratory gives students hands-on experience with high-speed networks and wireless ad hoc and sensor networks. His students have developed Missouri S&T Mote hardware for wireless ad hoc and sensor networks. These Motes have been successfully deployed and evaluated on a number of industrial applications. He is also Director of NSF Industry/University Cooperative Research Center Site at Missouri S&T where the Mote hardware and smart algorithms are used to detect and predict component and system failures. There are over 9 company members in the Center Site which include Boeing, Caterpillar, Chevron, Honeywell, Festo, 21st Century Systems, AVETEC and TRW Military. His overall funding for the past 10 years has exceeded over \$8 Million. He has co-authored 80 juried articles (mostly IEEE Transactions with his students), over 150 IEEE Conference publications, several book chapters, 3 text books, and holds 20 patents. He has advised over 25 M.S and 12 doctoral students.

DR. SAHRA SEDIGH is an assistant professor in Electrical and Computer Engineering, and joined the Computer Science Department on a joint appointment in Aug. 2009. Her research is in various aspects of critical infrastructure protection, including fault-tolerance for smart power grids and water distribution networks and structural health monitoring for civil transportation infrastructure. She teaches courses on networking and embedded systems and has developed a new course on performance analysis of networks. She also serves as a freshman advisor, and enjoys working with the freshmen while they are still bright-eyed and bushy-tailed.

DR. DANIEL TAURITZ or just Dr. T as the students call him, is the proud recipient of an S&T 2007-2008 Outstanding Teaching Award. He continues to enthusiastically teach his courses on Evolutionary Computing and Artificial Intelligence, running the 9th S&T Artificial Intelligence Tournament in spring 2009 (see article) and already in the planning stages for the 10th S&T Artificial Intelligence Tournament in spring 2010. After a hiatus of four years, this semester he is teaching Discrete Mathematics for Computer Science again, which he is scheduled to teach every fall semester for the coming years.

In addition to chairing the department's publicity committee, he is chairing S&T's Discipline Specific Curriculum Committee for the Sciences as well as S&T's Faculty Senate Library & Learning Resources Committee. Recently he has also been made a member of the department's ABET accreditation committee. He is also proud to serve as Late Breaking Papers Chair for the 2010 Genetic and Evolutionary Computation Conference, the largest conference series in the field of Evolutionary Computing.

He is enjoying his eighth year as the Missouri S&T ACM Student Chapter SIG Security advisor (see article). Since December 2004 he has been the Missouri S&T coordinator for Sandia National Laboratories' Center for Cyber Defenders (CCD); during summer 2005 he brought a team of outstanding students (three from CS, one from CpE) to the CCD as summer interns, and sent new teams every summer since. On the research front, Dr. Tauritz continues to lead the NC-LAB whose main focus is developing novel evolutionary algorithms and applying them to real-world problems from a diverse set of domains including Critical Infrastructure Protection, Automated Software Engineering, and Social Computing. He is currently supervising two Ph.D. students, one of whom was awarded a prestigious NSF Graduate Research Fellowship. The third and final year of his Computer Science Recruitment for the 21st Century project (see article) has successfully been concluded with a presentation of the project outcomes at the 2009 Grace Hopper Celebration of Women in Computing conference.

DR. THOMAS WEIGERT focused on redesigning the CS397/8 capstone class. This course serves both as a summary of the software development, computer science, and software engineering training students have received at MS&T, as well as a preview and preparation to the manner of software development students are likely to encounter when they embark on their working career as a software professional. The class proceeds primarily through experiential learning which simulates real-world project experience. Students work in large (10+) project team on a substantial project that can be developed in the course of a semester from in which they experience the whole software development lifecycle, from eliciting and analyzing customer requirements, formulating and executing project plans, designing and implementing a solution, testing the developed product, and delivering it to a customer. Emphasis is placed on a professional style of software development so that students are well prepared to enter the work environment.

Thomas was involved in many fruitful joint projects world-wide: With Prof. Amyot, Univ. Ottawa, he collaborated on the development of aspect-orient extensions to use-case maps. In an extensive collaboration with Prof. Letichevsky of the Glushkov Academy of Science of Ukraine, Kiev, Thomas collaborated on the development of novel techniques for the verification of large software-based systems, integrating model-checking and symbol reasoning. With Hengsoft, a private software service company, Thomas collaborated on the validating his methods for software development on industrial projects; in particular, they are currently performing jointly a redevelopment of a commercial telecommunications network element provided by a large telecom equipment manufacturer for a side-by-side comparison against their original product. Finally, Tolga Ovatman from the Istanbul Technical University spent

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the last year visiting Thomas to collaborate on the development of techniques for parallelizing software systems based on the static structure of software designs; they have demonstrated their techniques successfully on a number of open-source projects.

At the department level, Thomas is exploring the creation of distance graduate programs jointly with private institutions and international universities as partners.

DR. DONALD WUNSCH continues to serve as the International Neural Networks Society Senior Fellow, Chair of the INNS College of Fellows. His latest book, *Clustering* (<http://www.amazon.com/Clustering-IEEE-Press-Computational-Intelligence/dp/0470276800/>) with Rui Xu, is selling well. Two more books are soon forthcoming as Springer-Verlag titles. He is co-PI (with Venayagamoorthy) on a \$2 million NSF grant entitled: EFRI-COPN: Neuroscience and Neural Networks for Engineering the Future Intelligent Electric Power Grid. He is PI, with Venayagamoorthy and Tauritz, of the Army Research Office Grant entitled: DURIP: A GPU-based High Performance Computing Cluster for Multiple Military Modeling Capabilities. His other funded projects are on the Game of Go and Robotic Swarms. His next keynote talk is scheduled for January in Phuket, Thailand.

DAWN DAVIS is ending her 3rd year with the Computer Science Department. She still enjoys the challenges that come each day and says that she really enjoys working with the faculty, students, and everyone on the Missouri S&T campus. In her spare time (when she has any) she enjoys spending time with her husband, of 19 years, Rick, and her daughter, now 15, Kayla, and driving us around, camping, fishing, hunting, gardening, going to Antique Malls and being outdoors. Hope next year is as good or better than this year was.

RHONDA GRAYSON is ending another year with the Computer Science Department and now that the office renovations are completed she has settled in and is enjoying her new surroundings, thanks to Clayton she has beautiful artwork hanging on the walls. Rhonda's son, Coy, just turned 21 and is completing his business degree in Iowa. She enjoys going to watch him ride bulls whenever she can, now that he has started attending pro events. Rhonda and her husband, William, enjoyed fishing, going to auctions and attending rodeos this past year and hope to do even more of these in the upcoming year.



Left to right Dr. Fikret Ercal, Dr. Sanjay Madria, Dr. Frank Liu, Dr. Huzefa Kagdi, Dr. Dan Lin, Mr. Matt Buechler 2nd row Dawn Davis, Sr. Secretary, Dr. Jennifer Leopold, Dr. Daniel Tauritz, Dr. Chaman Sabharwal, Dr. Maggie Cheng 3rd row Rhonda Grayson, Administrative Assistant, Mr. Dave Mentis, Dr. Sriram Chellappan, Dr. Wei Jiang, Mr. Clayton Price, Dr. Bruce McMillin 4th row Dr. Ralph Wilkerson, Dr. Ali Hurson and Dr. Thomas Weigert.

Memorial

Carleen “Corky” Humphrey



Carleen “Corky” Humphrey, of Rolla, passed away at her home on Tuesday, April 7, 2009, at the age of 51.

She was born in Fort Leonard Wood, Mo., on January 21, 1958, to Charles and Fern (Doyel) Shackelfurd.

On July 21, 1990, she married Donnie Humphrey, who survives her.

Corky worked for many years at UMR (Missouri S & T) as an administrative assistant in the Computer Science Department. She was a member of Lifeline Baptist Church in Rolla.

She is preceded in death by her father, Charles Shackelfurd, sister, Katie Dillon, and her granddaughter, Brandi Borders.

She is survived by the love of her life, husband Donnie Humphrey; son, David Walker Jr.; daughters, Nichole Turner and husband Brian, Sissy Borders and husband John, Sammie Nichols and husband Andrew, and Dannie Henson and husband Lee; grandchildren, Abby, Kody, Skyler, Shelby, and Brandon Turner, Stephanie Jackson and husband Greg, Briar Earls, Lily, Logan, Carlie, and Alyssa Borders, Maddie Humphrey, and Kailee Henson, and one great grandson, Owen Jackson.

She is also survived by her mother, Fern Shackelfurd; sister, Donna Jones and husband Carl; brothers, Chuck Shackelfurd and wife Vicki, and Kurt Godfrey and wife Denise; mother-in-law, Virginia Carver; brothers-in-law and sisters-in-law, Jimmy and Kay Humphrey, George and Dee Humphrey, and Wade Humphrey; other extended family and friends to numerous to mention.

A funeral service for Corky Humphrey was held at 2 p.m. Friday, April 10, 2009, at the Null & Son Funeral Home with Rev. Richard Miller officiating.

Congratulations to S&T's 2008-2009 Computer Science Degree Recipients

December 2009

Bachelor of Science

Benjamin Brian Andelin
Kevin Daniel Berry
Jason Christopher Bright
Tory Antonio Cheatham
Joshua Michael Eads
Sarah Elizabeth Garofalo
Colin Paul Hanna
Chad Robert Henderson
William Thomas Holley
Matthew Boyd Hug
David Michael Leimer
Gregory Michael Letrello
Daniel Nieters
Timothy Ryan Olson
Derin Shawn Phelps II
Christopher Michael Polizzi
Christopher Frank Schwartz
Jessica Ann Williams

Master of Science

Ekta Irene Abraham
Sivaram Adhiappan
Nilav Adhikari
John Chaloupek
Anil Kumar Jade
Shishir Jai
Swetha Karna
Uday Kiran Kopanathi
Karthik Mohan
Santhosh Muthyapu
Santosh Reddy Poreddy
Manoj Singiresu
Mark Snyder
Yashadhan Mukund Tabib
Lei Wen
Joshua L. Wilkerson

Doctor of Philosophy

Julia Albath

May 2010

Bachelor of Science

Jonathan Joseph Blount
Donald Joseph Brinkley, II
Matthew Alexander Chittum
Timothy Scott Coalson
Brandon Tyler Cronin
Patrick Garrett Edgett
Jasmine Lorraine Glaese
Clayton Edward Harper
Kristen Lee Hoelzer
Jacob Wilson Huhman
Jefferey Robert King
Ashley Dawn Lang
David Wayne Linhorst
David Matthew Mattli
Ryan James Miller
Roberto Luis Murillo, Jr.
Benjamin Jay Murrell
Christopher Lee Roush
Otto Carl Schnarr, III
Charlotte Rose St. John
Daniel Jesse Welty

Master of Science

Ravi Chandra Akella
Mohit Bhatia
Daniel Orlin Hirsch, Jr.
Charles Anthony Huber
Justin Ray Miller
Adam Eugene Nichols

July 2010

Bachelor of Science

Will Andres Hurlburt

Master of Science

Hussain Makki Alafaireet
André Chidi Nwamba

Scholarships and Special Awards

CS Department Special Awards – Distinguished Speaker Award –

Terry Bollinger, Department of Defense, DeVenCI

CS Leadership Award – Mike Christensen

CS Mentor Award – Dylan McDonald

CS Ambassador Award – Mike Christensen

Outstanding Computer Science G T A Award – Josh Eads and Waraporn Viyanon

Accenture Scholarship – Ryan Holzum and Thomas Reese

Howard & Lois Cook Scholarship – Stephen Mues

John W. Hamblen Computer Science Scholarship – Adam Whaley

Ellen M. Hodges Memorial Scholarship – Joanna Kovarik, Chelsea Sanders, Tiffany Werckmann

Rex Widmer - RWS - Software Archaeology

Computer Science Scholar – Eric McClendon

Daniel C. St. Clair Scholars & Fellows – Tyler Biethman

Mark X. Stratman Scholarship – Alex White, Jacob Gardner and Sahil Majumdar

U.S. Steel Scholarship – **Renewal –** Michael Vanhorn and Matthew Entrekin **New** – Joseph Hawkes-Cates Thomas Roth, Kyle Ensign and Jacob Pennington

Garmin Scholarship – Jeremy Davidson and George Rush

CS Alumni Scholarships – Abhinav Saxena, Joshua Godi, Christopher Jones,

Sahil Singh, Dennis Gerald Holt II, William Marchetto, Michael Busby, Nathaniel Martin, Joshua Bohde, Kenneth Richardson, Janet Guntly and Jeffery Shelburg.

Boeing Scholarships – **Renewals –**

Jayne Frey, Joanna Gonzalez and Charlotte St. John

New – Lisa Lake, Rachel LaFiore, Emily Macke and Maggie Mense

CS Academic Achievement Award – 4.0

Freshman –

Jacob Gardner and William Reynolds

Sophomore –

Jacob Pennington

Junior –

Thomas Roth and Michael Vanhorn

Senior –

Janet Guntly and Clayton Harper

Masters –

Prabhu Angajala, Abhinav Chadda, Ajith Cherukad Jose, Aishvarya Choudhary, Sashi Gurung, Paul Knize, Hemanth Meka, Venkata Nerella, Adam Nichols, Andre Nwamba, Swathi Routhu, Bharath Samanthula, Maithili Satyavolu, Swetha Surapaneni and Rubal Wanchoo

Ph.D. –

Roy Cabaniss, Ding Chu, Derek Ditch, Neelanjana Dutta, Thoshitha Gamage, Lisa Guntly, Thomas Szalapski and Kumar Vimal

Computer Science Department 2009 Colloquium Series



Jan 23, 2009

Dr. Ramon Caceres

AT&T Labs – Research

Talk Title: Vis-a-Vis: Online Social Networking via Virtual Individual Servers

Abstract: Online social networks (OSNs) are immensely popular, but they raise important privacy concerns because they concentrate personal information for many users under a single administrative domain. We present Vis-a-Vis, a privacy-preserving framework for OSNs in which each person maintains her own information in her own Virtual Individual Server (VIS), a personal virtual machine running in the cloud. VISs self-organize into overlay networks, one per social group with which VIS owners wish to share information. Vis-a-Vis uses distributed hash tables to provide efficient and scalable operations on a wide variety of OSN groups, which makes large-scale privacy breaches much less likely than in centralized architectures, and gives people fine control over what information they share with whom.



Jan 23, 2009

Dr. Tracey Camp

Colorado School of Mines

Talk Title: MANET Simulation Studies: The Incredibles

Abstract: Simulation is the research tool of choice for a majority of the mobile ad hoc network (MANET) community. However, while the use of simulation has increased, the credibility of the simulation results has decreased. To determine the state of MANET simulation studies, we surveyed the proceedings of a top conference in the MANET area: the ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc). From our survey, we found significant shortfalls. Choosing an appropriate simulation scenario to study the performance of a MANET routing protocol is an important process. For example, routing will not be properly evaluated when a simulation scenario with a low average hop count or a large degree of network partitioning is used. To ensure that a simulation scenario provides an effective platform for testing a MANET routing protocol, we recommend that researchers use two metrics to characterize their simulation scenarios: the average shortest-path hop count and the average amount of network partitioning.



Feb 19, 2009

Kent Lynn

IBM

Talk Title: Building a Smarter Planet: leveraging the reality of global integration for our collective benefit

Abstract: This presentation will explore how the computer science and information technology communities can bring a new level of smart to how the world works - how every person, business, organization, government, natural system, and man-made system interacts. Each interaction represents a chance to do something better, more efficiently, more productively. But more than that, as the systems of the planet become smarter, we create meaningful opportunities for progress.

Computer Science Department 2009 Colloquium Series



Feb 26, 2009

Steven Nigus

Flight Safety International

Talk Title: Terabyte Geospatial Datasets for Flight Simulators

Abstract: Flight simulators used for pilot training place special emphasis on realism. The transfer of skills learned in the simulator to the real aircraft is adversely affected by unrealistic or uncharacteristic simulations. Fortunately, the availability of high-quality, high-resolution, low-cost terrain and image data is rapidly increasing, and we are able to present very high fidelity out-the-window training environments to the pilot. High fidelity comes at a cost. We must provide a world-wide dataset with high-resolution data covering hundreds of airports. The dataset must allow seamless flight from any airport in the world to any other airport with enough resolution to provide proper cues to the pilot given the current aircraft altitude. We quickly incur requirements to prepare, configure, render, and manage terabyte datasets organized as a geospatially indexed databases of imagery, terrain elevation, buildings, trees, etc. Simulator realism requirements dictate rendering of 3 million pixel scenes at 60 Hz hard real-time rates.



March 4, 2009

Dr. Takahiro Hara

Osaka University

Talk Title: Challenges of Query Processing in Mobile Ad Hoc Networks

Abstract: Recently, Mobile Ad hoc Networks (MANETs) have attracted much attention from various research communities due to challenges posed by the dynamic environment. For MANET applications in which mobile users share information, preventing the deterioration of data availability at the point of network partitioning is a very significant issue. Therefore, a large number of researches have been conducted on data management in MANETs, which will be the focus of this talk.



March 19, 2009

Dr. Joe Dvorak

Research in Motion

Talk Title: ZOIDS: The Future of Personal Technology

Abstract: As computing and communications technology pervades everything around us, this technology will have to become transparent to be accepted by the mainstream population. This transparency requires a new mindset and approach to the design of wearable devices and systems.

This talk gives an overview of usability and design issues for transparent use devices and proposes design principles to address them. These principles are based on a design paradigm called Operational Inertia. The talk discusses how to design Zero Operational Inertia Devices/Systems (ZOIDS) and why such devices are necessary if wearable systems are to be accepted by the mainstream population. While the talk focuses primarily on wearable systems and pervasive computing environments, the design principles are applicable to a wide range of applications and devices. Examples of the application of the principles are given.

Computer Science Department 2009 Colloquium Series



May 1, 2009

Dr. Mukesh Mohania

IBM – India

Talk Title: EROCS: Automatically linking documents with relevant structured information

Abstract: Consolidated analysis of critical business information distributed across structured and unstructured data is a key enabler for next generation business intelligence and search. In this work, we address the problem of linking a given text document with relevant structured data, retrieved automatically from a RDBMS. We have developed a prototype system, called EROCS, that views the structured data as a predefined set of "entities" and identifies the entities that best match the given document. EROCS also embeds the identified entities in the document, effectively creating links between the structured data and segments within the document. Unlike prior approaches, EROCS identifies such links even when the relevant entity is not explicitly mentioned in the document. EROCS exploits sophisticated optimizations in order to perform this task keeping the amount of information retrieved from the database at a minimum. We are also working on extensions of EROCS that enable such linkage even in the presence of noise and errors in the unstructured documents, and, in parallel, perform cleansing on the noisy documents with respect to the relevant structured data.



Sep 3, 2009

Dr. Lianzhang Zhu

China University of Petroleum

Talk Title: Technical Targets Setting in the Design of Web Service Systems Using QFD

Abstract: Web Service Systems are becoming a trend for system development and integration where systems group functionality around business processes. But there are at least two challenges with quality management of Web service systems. One of them is how to link explicitly its technical capabilities with customers' needs to satisfy customers' functional and nonfunctional requirements. The second is how to determine targets of Web service technical attributes. Quality Function Deployment (QFD) is a major quality management system used to determine product development characteristics from customer requirements. It has found its success in improving quality of complex products, such as automobiles, aircrafts, and consumer electronics, although it has not been used in the development of Web service systems. This talk will analyze a number of quality of Web service requirements and their related technical attributes, and apply the QFD for developing Web service systems by linking quality of service requirements to Web service design attributes.



Sep 10, 2009

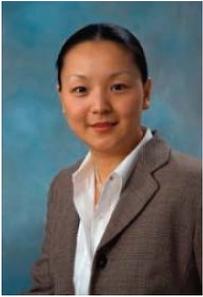
Dr. Takahiro Hara

Osaka University

Talk Title: Top-k Query Processing in Mobile Ad Hoc Networks

Abstract: Recently, Mobile Ad hoc Networks (MANETs) have attracted much attention from various research communities due to challenges posed by the dynamic environment. In this talk, our recent work addressing top-k query processing in MANETs is presented. This talk will introduce a technique to reduce the amount of data transmitted to acquire the complete result for a top-k query. Then, techniques to further reduce the amount of transmitted data by estimating score distribution in the entire network will be presented.

Computer Science Department 2009 Colloquium Series



Sep 17, 2009

Dr. Yu Jiao

Oak Ridge National Labs

Talk Title: Accelerating Scientific Discovery through Extreme-scale Data Analysis

Abstract: As instrument design advances, experiments are now conducted with unprecedented levels of accuracy and resolution. For example, the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory (ORNL) is currently the world's most powerful neutron source (NS). In the coming years it will provide the neutron scattering community with a combined two orders of magnitude increase in terms of flux and instrument sensitivity. This will allow not only structural determinations of systems with light and magnetic spins, but will also enable scientists to probe dynamics of nanoscale systems in the time and energy scales needed to infer the physico-chemical underpinning of many mechanisms in nano and biological sciences. On the one hand, the explosion of high-resolution data indicates that a wealth of detailed knowledge is readily available. On the other hand, the sheer volume of data often renders existing data analysis methods obsolete. In this talk, I will discuss some of the recent advances in data analysis for neutron sciences at peta-scale.



Sep 24, 2009

Dr. Jeffrey S. Wysocarski

MIT Lincoln Labs

Talk Title: QoS and Cross-Layer Optimization for Satellite Communications Networks

Abstract: To efficiently utilize limited RF resources, future packet-switched satellite networks will dynamically allocate resources on the uplink and downlink. Designing the resource-allocation algorithms to maximize link-layer efficiency is insufficient. The resource-allocation algorithms must work cooperatively with the network layer and transport layer to optimize network layer performance and provide quality of service (QoS) to applications and users. Several mechanisms for facilitating this required cooperation between the layers are presented. The individual roles and actions of the layers as well as their interaction are defined. Router QoS schedulers that continue to provide service differentiation in the presence of link variations are illustrated, and downlink scheduling architectures that provide terminal QoS guarantees are demonstrated. Finally, the interaction between Transmission Control Protocol (TCP) and the dynamic resource allocation algorithms is investigated, leading to suggested modifications of either the resource-allocation algorithms, the TCP, or both.



Oct 22, 2009

Dr. Raj Jains

Washington University in St. Louis

Talk Title: Internet 3.0: The Next Generation Internet

Abstract: The original design of Internet (or Internet 1.0) had no concept of ownership and the routing was very simple but limited to a small scale network. The commercialization of Internet in 1989 (which we call Internet 2.0) brought in the need for multi-organizational ownership of the infrastructure resulting in security issues and in Inter-domain routing, such as BGP. The ownership issues result in routing based on policy issues more than the cost or speed of links.

Computer Science Department 2009 Colloquium Series



Nov 12, 2009

Dr. Dilma Da Silva

IBM

Talk Title: System Software for Cloud Computing

Abstract: Cloud computing has been receiving a lot of attention from the computing community. It is perceived as some as the "IT fad of the moment" and by others as a revolutionary approach to deliver computing services. In this talk we analyze cloud computing from the perspective of system software, exploring how this new model impacts current practices in operating systems and distributed computing. We identify a set of exciting research opportunities in resource management for cloud computing and discuss how cloud computing itself affects the way we carry out research projects.



Dec 3, 2009

John Hock

IBM

Talk Title: Developing Your Leadership Skills in a Technical Career

Abstract: Technical leadership in today's business environment demands much more than technical savvy and know-how. Successful technical leaders understand how to thrive within the whole business and technical spectrum surrounding them. This presentation will help you to understand how to set yourself apart in business as a technical leader. And in doing so, you will learn how you can empower yourself, take charge of your career, and have a much more rewarding and fulfilling lifetime professional experience.

iPhone app paying dividends



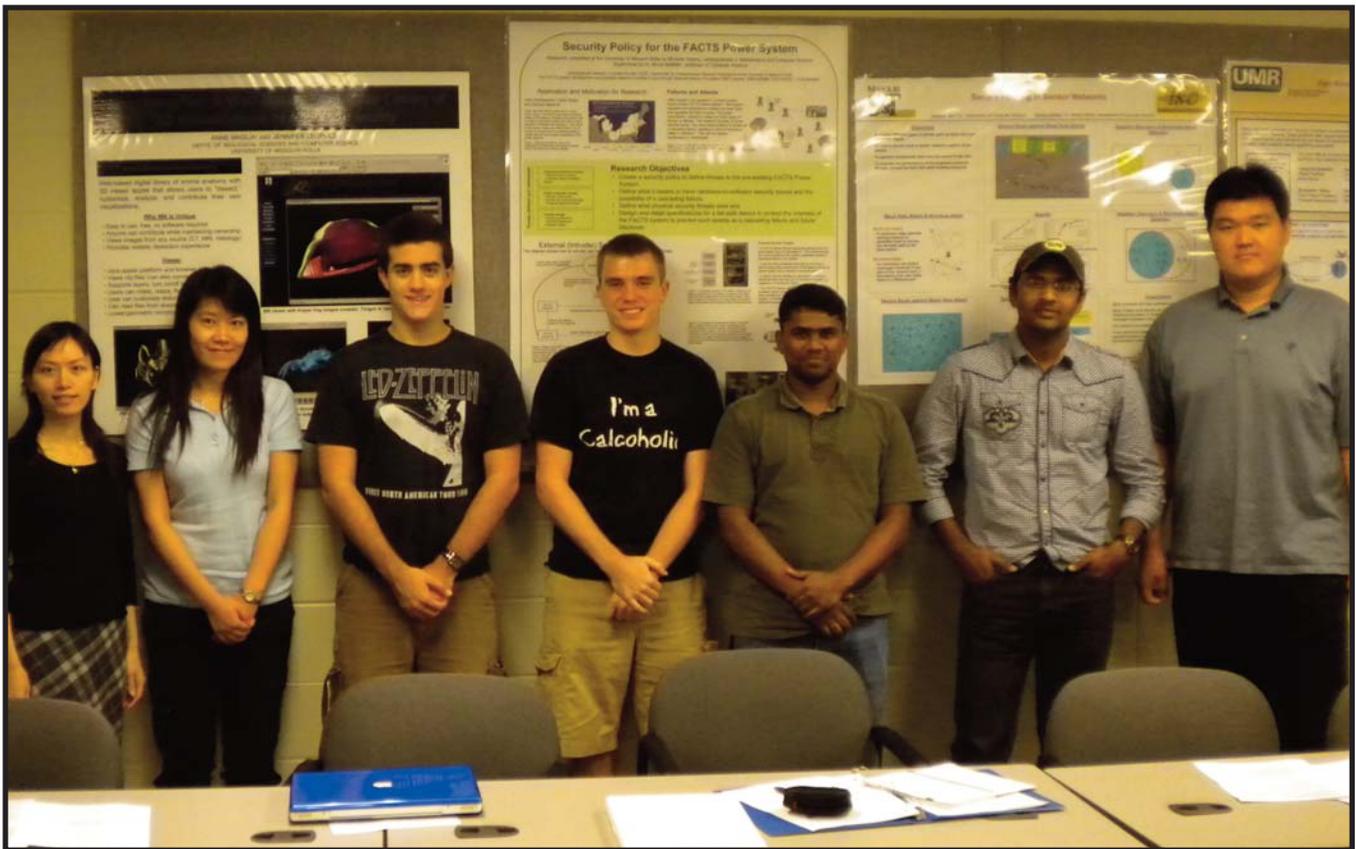
Kenneth Perry, a senior majoring in Computer Science, is the lead developer for Interdisciplinary Design Collaborative LLC. In May the company released an iPhone application called the barcodescan which allows people to scan a product's barcode and then find information on that product such as reviews prices, and where it is being sold. A free version of that application has over 200,000 downloads. The company is currently working on a design for a device that can monitor electrical usage in a home.

Computer Science Student Organizations

Missouri S&T IEEE Computer Society Student Branch is coming back!

Missouri S&T IEEE computer society student branch has been dormant for years. Now it is coming back with renewed vigor!

Two faculty members from Missouri S&T-- Dr. Choi and Dr. Lin-- are devoting their efforts to setting up a dynamic and active student organization with the goal of enhancing the academic, professional and technological development of the student members.



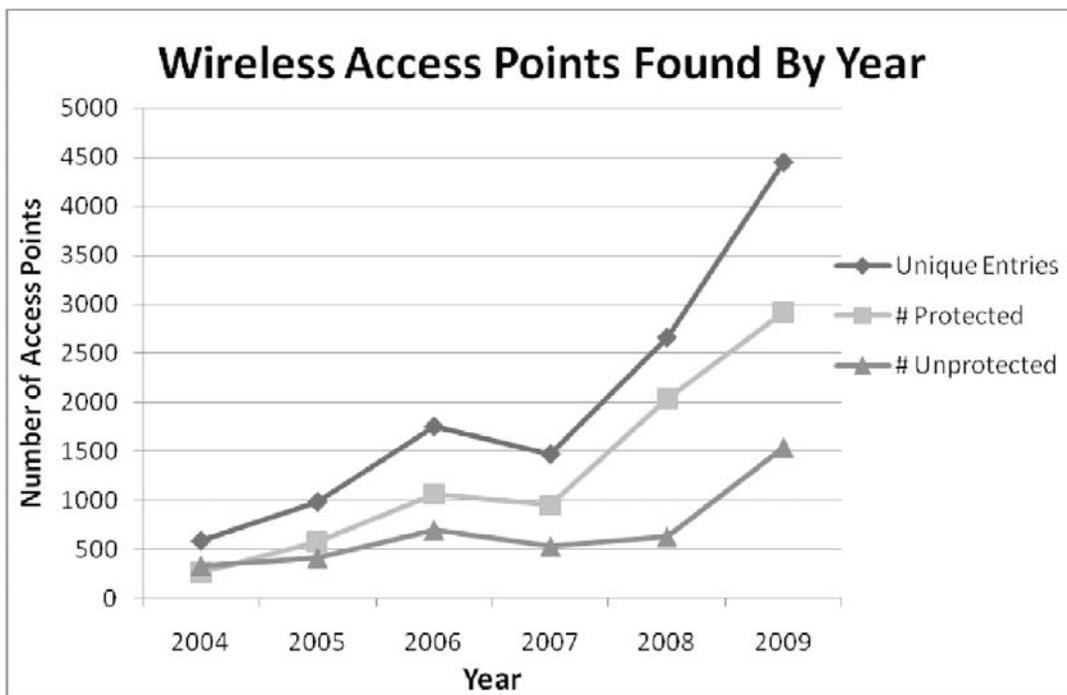
From left to right: Dan Lin (co-advisor, computer science), Jing Lin (vice chair, computer engineering), Scott Follmer (vice chair, computer science), William Marchetto (secretary, computer engineering), Thoshitha Gamage (chair, computer science), Prabu Kumar Angajala (treasurer, computer science), Minsu Choi (co-advisor, computer engineering).

Association for Computing Machinery- SIG Sec (ACM-SIG Sec)

The Missouri S&T Association for Computing Machinery (ACM) student branch Special Interest Group: Security (SIG Sec) is a student group focused on computer & network security. Founded seven years ago, the organization is currently chaired by James Munns, with Dr. Daniel Tauritz as faculty advisor. SIG Sec meetings are typically bi-weekly, featuring a wide variety of speakers on topics ranging from software vulnerabilities and real-world tools to security projects and research. The group also works on its own security projects, such as building cantennas (antennas made from soup, coffee or Pringles cans that increase the gain of wireless cards), wireless auditing (mapping open wireless access points so owners can be informed), security auditing of student computers, and the SIG Sec computer security challenge (controlled environment competition in which participants compete to be the first to penetrate a protected computer system).

Highlights of the 2009-2010 academic year so far:

- 6th Annual Rolla Wireless Security Audit
Part 1: Cantenna Building Party led by the SIG Sec Officers (see photo on page 23)
Part 2: Wireless Security Audit Competition



- Presentation by members of the technical staff of Sandia National Laboratories – who happen to be alums of our department – on Science-based Cyber Security; i.e., quantifiable and certifiable cyber security.

For more information see S&T's ACM SIG Security website at: <http://acm.device.mst.edu/security/>

Association for Computing Machinery- Women (ACM-W)

Charissa Mathis continues to serve as the chair of ACM-W. This year we have a new team to support her. Dr. Dan Lin, an assistant professor in the department, will be the new faculty advisor. Prabhu Kumar Angajala, a CS graduate student, will be the new vice chair. Excitingly, Prabhu Kumar is the first male vice chair in the history of our ACM-W. Officers of ACM-W promise that they will focus their enthusiasm on creating an active learning environment and supporting women for computing. Plans in this year's calendar include interesting talks, indispensable peer consulting, exciting field trips, and much more.



From left to right: Dan Lin (advisor), Charissa Mathis (chair) and Prabhu Kumar Angajala (vice chair)



Cantenna Building Party led by the SIG Sec Officers

Association for Computing Machinery (ACM)



Zach Zeman, the boy with the curse of always being called out last in an alphabetically listed world, will finally have his revenge. Zach is the ACM president for the 2009-2010 academic year, and for two sweet **sweet** semesters, he has the privilege of being listed first on all of our documents.

Jokes aside, ACM is very lucky to have Zach on board as president. For three years prior to his presidency, Zach has served in several successful leadership roles with ACM Special Interest Group Security. It was there that Zach's leadership helped the new organization to blossom into a thriving community. Now as president of ACM, he is set to continue and expand upon the incredible legacy of president Josh Eads 2007-2008 and president Ben Murrell 2008-2009. We already have nine meetings planned for the fall semester: one career fair dinner, a visit to UIUC for the Mechmania programming contest, the ACM Regional Programming contest, MegaMiner (their own AI programming contest), and MinerLAN (their own lan party). On top of these events, ACM will be finishing the oh-my-goodness-has-it-really-been-underconstruction-for-ten-years interactive soda machine and then will move on to our new project, the December lights display which will light up the Computer Science building at night and will coordinate with live music playing from the roof.



From left to right: Jon Carter (MinerLAN Admin), Zach Zeman (President), Zach Brownfield (Secretary), Doug Kelly (Librarian), Kyle Ensign (Treasurer), and Josh Eads (Vice President)

Recruiting Future Computer Scientists – Epitaph

Although the demand for Computer Scientists is expected to keep increasing for the foreseeable future, the enrollment in Computer Scientist (CS) degree programs in higher education dropped 49% between the 2001/2002 and 2006/2007 academic years according to a March 2008 report by the Computing Research Association. Furthermore, the proportion of CS bachelor's degrees awarded to females has fallen from 36% to 21% between 1983 and 2006 as indicated by the National Center for Women & Information Technology's 2007 Scorecard report.

After three years, the Computer Science Recruitment for the 21st Century (CSRecruit21) project led by Dr. Tauritz has been concluded. The purpose of this project was to increase the enrollment in, and counter the negative stereotypes associated with, CS degree programs. The approach was to target students in third and fourth grade, before they begin to choose elective courses and while they still have an open mind as to their choice of career. The goal was to open the students' minds to a possible career choice in CS by having them interact with the CSRecruit21 software which is composed of highly visual games, puzzles, information about the field of CS, as well as information regarding the personal experiences of the Missouri S&T CS alumni as they use CS in their everyday careers.

The project received three years of consecutive Collaborative Research Experience for Undergraduates (CREU) grants provided by the Computer Research Association's Committee on the Status of Women in Computing Research (CRA-W), an organization focused on increasing the number of women participating in computer science and engineering research. Additional funding for all three years was provided by Missouri S&T's Opportunities for Undergraduate Research Experience (OURE) program. The CS student teams were composed as follows:

Year 1 (2006-2007): Kristen Loesch and Laura Woodard

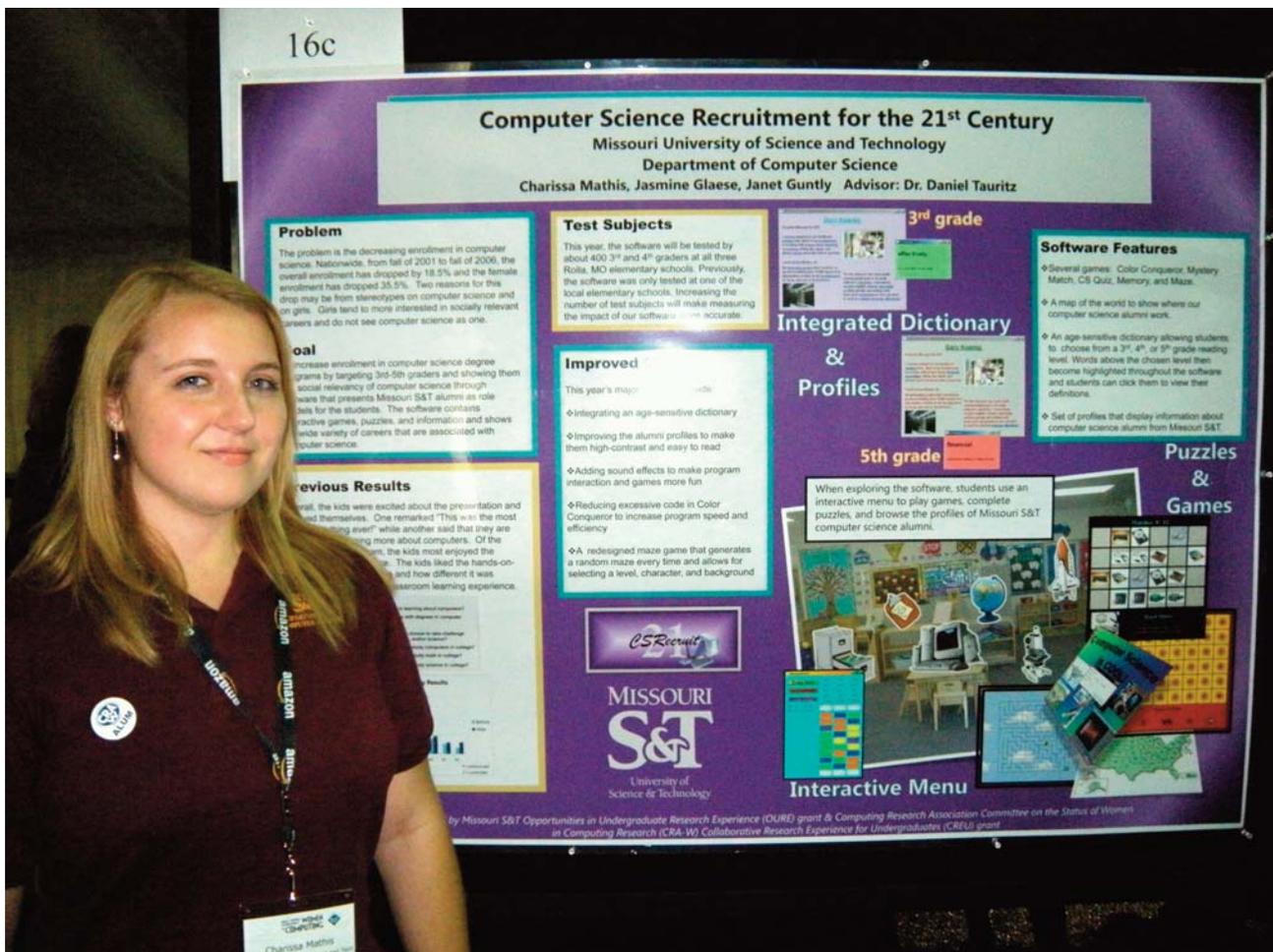
Year 2 (2007-2008): Lisa Guntly, Jasmine Glaese née Bowles, and Jessica Williams

Year 3 (2008-2009): Janet Guntly, Jasmine Glaese née Bowles, and Charissa Mathis

In the first two years of the project, the software was field-tested at Mark Twain Elementary School in Rolla, Missouri to third and fourth grade students. In the final project year, the software was presented to 140 third and fourth grade class students at all three Rolla, Missouri elementary schools. Based on the team's observations and the feedback received, the students highly enjoyed the software. The percentage of students that indicated they were aware of the job opportunities for people with CS degrees increased by 3% after they were exposed to the software. The percentage of them that indicated that they would like to study computers, math, and science in college increased by 10%, 4%, and 6% respectively. The percentage of the students that indicated their intention to take challenging courses in computers, math, and/or science increased by 10%. Based on the results, we conclude that the students did indeed increase their knowledge of what CS is, its applicability to society, and the type of employment opportunities for computer scientists. It is our hope that this will eventually translate into an increased enrollment in CS.

The project has received a lot of publicity since its inception and has won several awards in Missouri S&T's Undergraduate Research Conference. It has been featured on KUMR's radio program TechnoFiles and on S&T's world wide web home page, at the Undergraduate Research Day at the Capitol in Jefferson City, Missouri, S&T's Advancing Excellence Campaign Student Highlights, S&T's CS Academy, and S&T's CS Ad-

visory Board. Most significantly of all, it has been presented for three consecutive years at the Grace Hopper Celebration of Women in Computing conference (<http://www.gracehopper.org>) research poster session.



Charissa Mathis presenting a CSRecruit21 poster at the Grace Hopper Celebration of Women in Computing 2009 Conference

For detailed information on the CSRecruit21 project, including technical reports and a copy of the CSRecruit21 software, see the CSRecruit21 website: <http://web.mst.edu/~csrec21/>

The Fall Semester Career Fair Dinner Made Possible by Nucor-Yamato

For the last two years the ACM students and Computer Science Department have been working together to host a Career Fair Dinner. The Career Fair Dinner is held once a semester on the night of the Missouri S&T Career Fair. The purpose of this dinner is to provide an informal and relaxed atmosphere in which the students of the department can get together with the representatives of companies who are seeking to recruit them. This semester's dinner was held at Alex's Pizza Palace in downtown Rolla and hosted over 40 undergraduate students and several representatives from Lockheed-Martin, Sandia National Labs, Federal Bureau of Investigation, Nucor-Yamato, Tradebot, and Garmin. This event's success owes a big thank-you to the current ACM treasurer, Kyle Ensign, for organizing and playing the role of primary host for the night's festivities.



S&T Defeats Urbana-Champaign! S&T Participation Made Possible by Cerner

For four years now S&T ACM students have been making a pilgrimage to the University of Illinois-Urbana-Champaign Reflections |Projections Conference. Reflections |Projections is the largest student computing conference in the Midwest. It hosts over 500 students, 25 corporate sponsors, and 16 industry leading speakers. The conference offers a plethora of learning and professional opportunities, but what catches our student's attention the most is the Mechmania artificial intelligence programming competition. Mechmania is an intense contest. Students are given 24 hours to develop an artificial intelligence routine that can compete in a free-for-all game area. The atmosphere is both fun and tense.

From the get-go, S&T's students made their mark by earning second place at our very first Mechmania in 2006. In 2007, S&T students proved that their first appearance was not a fluke and again placed in second. The 2008 Mechmania was filled with high hopes, but technical difficulties prevented the competition from ever taking place. Now in 2009, we've earned our first place victory. Team Easy Breezy composed of Zach Zeman, Jeff Shelburg, and Jeff Arneson battled it out in a full day of programming to end victorious over all others. This is an incredible accomplishment and Team Easy Breezy is our new local celebrity. If you see any of the members, please congratulate them on a job well done!



Artificial Intelligence Tournament

Winter Semester 2003 gave birth to a new S&T tradition: the Artificial Intelligence Tournament Series, created and organized by Dr. Daniel Tauritz and hosted by S&T's Department of Computer Science. This series follows a tradition of in-class tournaments in Computer Science course CS347 – Introduction to Artificial Intelligence, but aims to broaden that scope by inviting campus-wide participation in public tournaments and having formal awards ceremonies. This tournament gives students, faculty and staff a chance to test their skills in designing & implementing Artificial Intelligence by having their creations compete against each other and with human beings. Typically, each academic year a new challenge in the form of a (board) game, is chosen to be solved during that year's tournament(s). Three winners are chosen each tournament and presented with trophies & prizes. Each semester the name of the first place winner is engraved on a perpetual plaque and displayed in the glass trophee case on the second floor of the Computer Science Building.

In the spring of 2003 the game was Abalone and the winners were, first place: Christopher Walker, second place: Alex Berry, and third place: Brad Martin. The fall 2003 semester and spring 2004 semester challenged everyone with Stratego. The winners for fall 2003 were, first place: Brian Sea, second place: Matthew Allen, and third place: Rahul Maheshwary. Thanks to Microsoft for sponsoring the prizes this semester.

In spring 2004 the winners were, first place: John Jost, second place: Michael Thielker, and third place: Jason Godding. Thanks to Microsoft and S&T's CS Department for sponsoring the prizes this semester.

The 2004-2005 academic year featured chess, a classic challenge in Artificial Intelligence. The fall 2004 winners were, first place: Travis Service (human player), second place: Travis Service (his computer player!), and third place: David Cape (human player). Thanks to Microsoft for sponsoring the prizes that semester.

The winners in spring 2005 were, first place: Travis Service (again as a human player!), second place: Chad Deshon (computer player), and third place: Jimmy Townsend (human player). New in spring 2005 was the participation by a number of students from Rolla Public High School. Thanks to Network Appliance, Inc. in St. Louis for sponsoring the prizes that semester.

The 2005-2006 academic year challenge was the board game Othello (also known as Reversi). The fall 2005 winners were, first place: Raymond Myers (computer player), second place: Charles Huber (computer player), and third place: Mark Snyder (computer player). Thanks to S&T's CS Department for sponsoring the prizes this semester.

In spring 2006 the winners were, first place: Evan Wright (computer player), second place: Jeremy Dick (computer player), and third place: Charles Huber (computer player). Thanks to S&T's CS Department for sponsoring the prizes this semester.

In the fall of 2006 the game was Backgammon, a special challenge because of the stochastic element added through the use of dice. The winners were, first place: Mohammed Das (human player), second place: Nathan Alfermann (human player), and third place: Jason Cook (human player). Thanks to S&T's CS Department for sponsoring the prizes this semester.

In fall 2007 the challenge was the board game Mancala. The winners were, first place: Evan Wright (computer player), second place: Tim Olson (computer player), and third place: Tim Coalson (computer player). Thanks to S&T's CS Department for sponsoring the prizes this semester.

After skipping 2008 due to CS347 not being taught that year, a tournament was held again in spring 2009, featuring again the classic challenge of chess. The winners were, first place: Brian Goldman (computer player), second place: Brian Derickson (computer player), and third place: Steven Wallace (computer player). Thanks to S&T's CS Department for sponsoring the prizes this semester.

The next tournament is scheduled for Saturday May 1st 2010 and tentatively the challenge will be Backgammon. Hopefully the computer players will do better this time than in 2006!

Additional information on the AI Tournament Series can be found at <http://web.mst.edu/~tauritzd/AI-Tournament/>.

NOTE: Dr. Tauritz is always looking for (corporate) sponsors for the Artificial Intelligence Tournament Series (great publicity!). For more information, E-mail him at: tauritzd@mst.edu.

2009 Publications by Research Area

Software Engineering

Faculty: Liu, Kagdi, McMillin, Weigert

Publications:

Guéhéneuc, Y., Kagdi, H., Maletic, J.I., Using Eye-Tracking to Understand Program Comprehension, in the Proceedings of 17th IEEE International Conference on Program Comprehension (ICPC 09), Vancouver, British Columbia, Canada, May 17-19, 2009.

Kagdi, H.; Poshyvanyk, D.; Who Can Help Me with this Change Request?, in the Proceedings of 17th IEEE International Conference on Program Comprehension (ICPC 09), Vancouver, British Columbia, Canada, May 17-19, 2009.

Leu, M; Wu, J; Liu, X; "Axiomatic functional and object-oriented product design framework." CIRP Annals - Manufacturing Technology, Vol. 58 (2009). pp. 147–152.

Liu, X; Khudkhudia, E; Wen, L; Sajja, V; Leu, M. An Intelligent Computational Argumentation System for Supporting Collaborative Software Development Decision Making. In Artificial Intelligence Applications for Improved Software Engineering Development: New Prospects, 2009. IGI Global, USA, Ed. Farid Meziane and Vadera Sunil.

Liu, X; Satyavolu, M and Leu, M. "Contribution Based Priority Assessment in a Web-based Intelligent Argumentation Network for Collaborative Software Development", Proc. of the 2009 IEEE Symposium on Collaborative Technologies and Systems, Baltimore, Maryland, May, 2009.

Liu, X and Zhu, L; "DESIGN OF SOA BASED WEB SERVICE SYSTEMS USING QFD FOR SATISFACTION OF QUALITY OF SERVICE REQUIREMENTS," proc. of the 2009 IEEE International Conference on Web Services, July, 2009, Los Angeles, CA.6-10

Mussbacher, G.; Amyot, D.; Weigert, T.; and Cottenier, T. Feature Interactions in Aspect-Oriented Scenario Models, Proceedings of the 10th International Conference on Feature Interactions June 11-12, 2009.

Sun, Y and Liu, X. "Business-Oriented Software Process Improvement Based on CMMI Using QFD," To appear in the Journal of Information & Software Technology.

Van Baelen, S.; Weigert, T.; Ober, T. and Espinoza; H.; Model Based Architecting and Construction of Embedded Systems MB-ACES, Workshop at MODELS 2009 Forthcoming in Springer Verlag LNCS

Van Baelen, S.; Weigert, T.; Ober, I.; and Espinoza, H.; Proceedings of the 2nd Int. Workshop on Model Based Architecting and Construction of Embedded Systems

Weigert, T.; Weil, F; and Marth, Practical Experiences in Using Model-Driven Engineering, Telekktronik 3, 2009.

Wu,J; Leu, M and Liu,X. "A Hierarchical Object-Oriented Functional Modeling Framework for Co-Design of Mechatronic Products," Accepted for publication in the Journal of Concurrent Engineering: Research and Applications.

2009 Publications by Research Area

Continued

Security, Critical Infrastructure Protection, and Cyber-Physical Systems

Faculty: Chellappan, Jagannathan, Jiang, Lin, Liu, Madria, McMillin, Miller, Sedigh, Tauritz

Publications:

Albath, J and Madria, S. Secure Hierarchical Aggregation in Sensor Networks, in proceedings of IEEE Wireless Communications and Networking Conference (WCNC 2009), Hungary 5–8 April 2009.

Al-Assadi, W.; Gandla, S.; and Sedigh, S.; Design of a Flood prediction system. In Proceedings of the 12th International IEEE Conference on Intelligent Transportation Systems (ITSC '09), St. Louis, USA, Oct. 2009.

Bastianini, F.; Harms, T.; and Sedigh, S. Autonomous structural health monitoring with the SmartBrick platform. In Proceedings of the 12th International IEEE Conference on Intelligent Transportation Systems (ITSC '09), St. Louis, MO, Oct. 2009.

Bertino, E; Brodie, C; Calo, S; Cranor, L; Karat, C; Karat, J., Li, N; Lin, D; Lobo, J; Ni, Q; Rao, P. and Wang, X. “Analysis of Privacy and Security Policies”, IBM journal, 2009.

Dai, C; Lin, D; Kantarcioglu, M.; Bertino, E; Celikel, E. and Thuraisingham, B. “Query Processing Techniques for Compliance with Data Confidence Policies”, 6th VLDB Workshop on Secure Data Management, 2009.

Ditch, D and McMillin, B. “The Security Implication of Multiple Observers in a Distributed System,” 33rd Annual IEEE International Computer Software and Applications Conference, July, 2009, Seattle, WA, pp. 341-346.

Faza, A.; Sedigh, S.; and McMillin, B. Reliability analysis for the advanced electric power grid: from cyber control and communication to physical manifestations of failure. In Proceedings of the 28th International Conference on Computer Safety, Reliability and Security (SAFECOMP '09), Hamburg, Germany, Sept. 2009, recipient of best paper award.

Guo, J.; Crow, M. and Jagannathan, S. “An improved UPFC control for oscillation damping”, IEEE Transactions on Power Systems, vol. 24, no. 1, pp. 288-296, February 2009.

Gamage, T. and McMillin, B. “Non-Deducibility Based Analysis of Cyber-Physical Systems,” Proceedings of the Third IFIP WG 11.10 International Conference on Critical Infrastructure Protection, Dartmouth, NH, March 22-25, 2009.

Gamage, T. and McMillin, B. “EM Enforcing Information Flow Properties using Compensating Events,” Proceedings of the 42nd Hawaii Conference on System Sciences, January, 2009.

Harms, T.; Shah, P.; Sedigh, S.; Bourque, Z. and Bastianini, F.; Zigbee-enabled structural health monitoring with the Smart-Brick network. In Proceedings of the 7th International Workshop on Structural Health Monitoring (IWSHM '09), Stanford, USA, Sept. 2009.

J. Lin, S. Sedigh, and A. Miller. Towards integrated simulation of cyber-physical systems: a case study on intelligent water distribution. In Proceedings of the 8th IEEE International Conference on Pervasive Intelligence and Computing (PICom '09), Chengdu, China, Dec. 2009, accepted.

Jiang, W.; Murugesan, M.; Clifton, C.; and Si, L.; “t-Plausibility: Semantic Preserving Text Sanitization”, The 2009 IEEE International Conference on Privacy, Security, Risk and Trust (PASSAT09), Vancouver, Canada, August 29-31, 2009.

Kantarcioglu, M.; Inan, A.; Jiang, W.; and Malin, B.; “Formal anonymity models for efficient privacy-preserving joins”, Data & Knowledge Engineering (DKE), Elsevier. To appear.

2009 Publications by Research Area

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Li, N.; Wang, Q.; Qardaji, W.; Bertino, E.; Rao, P.; Lobo, J.; and Lin, D. "Access Control Policy Combining: Theory Meets Practice", ACM symposium on access control models and technologies (SACMAT), 2009.

Madden, J. and McMillin, B. "Environmental Obfuscation of a Cyber-Physical System - Vehicle Example," International Conference on Knowledge Intensive Multi-Agent Systems, October 11-14, 2009, to appear.

Madria,; Yin S.: SeRWA: A secure routing protocol against wormhole attacks in sensor networks. *Ad Hoc Networks* 7(6): 1051-1063 (2009)

Marupally, P.; Paruchuri, V and Chellappan, S. "Privacy Preserving Portable Health Record (P³HR)", in Proc. of Twelfth International Conference on Network based Information Systems (NbiS), Indianapolis, August 2009.

Mehraeen, S.; Jagannathan, S. and Crow, M.; "Novel dynamic representation and control of power systems with FACTS Devices", IEEE Transactions on Power Systems, accepted for publication, Oct 2009.

Rao, P.; Lin,D; Bertino, E.; Li, N.; and Lobo, J.; "An Algebra for Fine-Grained Integration of XACML Policies", ACM symposium on access control models and technologies (SACMAT), 2009.

Service, T. and Tauritz, D. Increasing Infrastructure Resilience through Competitive Coevolution. *New Mathematics and Natural Computation*, 5(2):441-457, July 2009.

Wang, K.; Crow, M.; Cheng, Y.; and McMillin, B.; "A Hardware-in-loop FACTS control system design for real-time power system simulation," Proceedings of the 2009 Power Engineering Society General Meeting, 2009 (to appear).

Zarghami, M.; Crow, M.; and Jagannathan, S. "A novel approach to inter-area oscillation damping by unified power flow controllers utilizing ultracapacitors", IEEE Transactions on Power Systems, accepted for publication, June 2009.

Networking and Sensors

Faculty: Chellappan, Cheng, Jagannathan, Hurson, Madria, Sedigh

Publications:

Anguswamy, R.; Zawodniok, M.; and S. Jagannathan, "A multi-interface multi-channel routing protocol for wireless ad hoc networks", Proceedings of the IEEE Wireless Communications and Networking Conference, pp. 1-6, April 2009.

Anguswamy, R.; Saygin, C. and Jagannathan, S. "In-process detection of fastener grip length using embedded mobile wireless sensor network-based pull type tools", *International Journal of Manufacturing Technologies and Special Issue on Advanced Manufacturing Technologies*, vol. 4, no.2, pp. 154-170, 2009.

Basheer, M.R. and Jagannathan, S.; "A new parameter to enhance location accuracy in RSSI based real-time location systems", Proc. of the IEEE Conference on Sensor, Mesh, and Ad hoc Communications and Networks, pp. 1-9, June 2009.

Bai, X.; Ding, L.; Teng, J.; Chellappan, S.; Xu, C.; and Xuan, D.; "Directed Coverage in Wireless Sensor Networks: Concept and Quality", in Proc. of the Sixth IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), Macau, October 2009.

Banks, B.; Harms, T.; Bastianini, F.; and Sedigh, S.; A low-cost wireless system for autonomous generation of road safety alerts. In Proceedings of the 16th International SPIE Symposium on Smart Structures and Materials and Nondestructive Evaluation and Health Monitoring, San Diego, USA, Mar. 2009.

2009 Publications by Research Area

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Cheng, M.; Gong, X.; Huang, S.; “Improving Sensor Network Lifetime Through Hierarchical Multihop Clustering”, IEEE ICC 2009.

Cheng, M.; Gong, X.; Cai, L.; “Joint Routing and Link Rate Allocation under Bandwidth and Energy Constraints in Sensor Networks”, IEEE Transactions on Wireless Communications, Vol. 8, No. 7, pp 3770-3779, 2009.

Eslamnour, B. ; Zawodniok, M.; and Jagannathan, S.; “Dynamic channel allocation in wireless networks using adaptive learning automata”, Proceedings of the IEEE Wireless Communications and Networking Conference, pp. 1-6, April 2009.

Fonda, J.; Zawodniok, M.; Jagannathan, S.; and Watkins, S. ; “Adaptive distributed fair scheduling for multiple channels in wireless sensor networks”, International Journal of Distributed Sensor Networks, vol. 5, pp. 1-9, 2009.

Harms, T.; Banks, B.; Sedigh, S.; and Bastianini, F.; Design and testing of a low-power wireless sensor network for structural health monitoring of bridges. In Proceedings of the 16th International SPIE Symposium on Smart Structures and Materials and Non-destructive Evaluation and Health Monitoring, San Diego, USA, Mar. 2009.

Jade, A.; Madria, S.; and Linderman, M. Incentive Based Routing Protocol for Mobile Peer to Peer Networks, in IEEE proceedings of 10th Intl Conf on Mobile Data Management (MDM, 2009), Taipei, Taiwan, May 2009.

Jean E., Collins, R.T., Hurson, A.R., Sedigh, S., and Jiao, Y., “Pushing Sensor Network Computation to the Edge”, Wicom 2009.

Kandath C.; and Chellappan, S.; “Angular Mobility Assisted Coverage in Directional Sensor Networks”, in Proc. of First International Workshop on Emerging Mobile Networks (EMNs) in conjunction with Twelfth International Conference on Network based Information Systems (NbiS), Indianapolis, August 2009.

Kulkarni, R.; Venayagamoorthy, G. K; Cheng, M.; “Bio-Inspired Node Localization in Wireless Sensor Networks”, IEEE SMC 2009.

Landstra, Tim.; Zawodniok, M.; and Jagannathan, S.; “Energy efficient hybrid key management protocols for wireless sensor networks, International Journal of Network Security, vol.9, no.2, pp.121-134, Sept. 2009.

Parthasarathy, R., Peterson, N., Shirazi, B., Song, W., and Hurson, A. “Over the Air Programming on Imote2-based Sensor Networks”, Hawaii International Conference on System Sciences, 2010.

Peterson N., Anusuya-Rangappa L., Shirazi B., Huang R., Song W.-Z., Miceli M., McBride D., Hurson A.R., LaHusen R., “TinyOS-based Quality of Service Management in Wireless Sensor Networks”, Hawaii International Conference on System Sciences, 2009.

Shah, P ; Singh, A.; Agarwal, S; .and Sedigh, S. Sensor data fusion for spectroscopy-based detection of explosives. In Proceedings of the SPIE Symposium on Defense, Security +Sensing, Orlando, FL, Apr. 2009.

Snyder, M.; and Chellappan, S.; “Event Coverage in Sparse Mobile Sensor Networks”, in Proc. of Twelfth International Conference on Network based Information Systems (NbiS), Indianapolis, August 2009.

Soylemezoglu, A. ; Zawodniok, M.;and Jagannathan, S.; “RFID based smart freezer”, IEEE Transactions on Industrial Electronics: Special Issue on RFID Technology, vol. 56, no. 7, pp.2347-2356, July 2009.

Tangpong A., Kesidis G., Hsu Hung-yuan, and Hurson, A.R., “Robust Sybil Detection for MANETs”, ICCCN 2009.

2009 Publications by Research Area

Continued

Mobile and Pervasive Computing

Faculty: Hurson, Lin, Madria, Sedigh

Publications:

Hara, T.; Madria, S: Consistency Management Strategies for Data Replication in Mobile Ad Hoc Networks. IEEE Trans. Mob. Comput. 8(7): 950-967 (2009)

Lim, J.B., Hurson, A.R., and Jiao, Y., "TRANSACTION PROCESSING IN MOBILE, HETEROGENEOUS DATABASE SYSTEMS", Encyclopedia of Computer Science & Engineering, Wiley publications, 2009, Vol. 5, pp. 2922-2930.

Lin, D.; Bertino, E.; Cheng, R.; Prabhakar, S.; "Location Privacy in Moving-Object Environments", Transactions on Data Privacy, (2)1: 21-46, 2009.

Madria, S.; Viyanon,W.; A System for Detecting XML Similarity in Content and Structure Using Relational Database, to appear in the Proceedings of 18thACM International Conference on Information and Knowledge Management (ACM CIKM 2009), Hong Kong, China.

Mondal, A.; Madria, S.; and Kitsuregawa, M.; An Economic Incentive Model for encouraging Peer Collaboration in Mobile-P2P networks with support for constraint queries, to appear in the International Journal of Peer-to-Peer Networking and Applications, Springer, 2009

Mondal, A.; Madria, S. and Kitsuregawa, M.; A Collaborative Replication Approach for Mobile-P2P Networks, International Journal of Handheld Computing Research (IJHCR), 2009 (Invited Paper).

Ongtang M., Hurson A.R., Jiao Y., "Agent-based Infrastructure for Data and Transaction Management in Mobile Heterogeneous Environment", International Conference on Communications and Mobile Computing, 2009.

Passi, K.; Morgan, D. and Sanjay Madria, Incremental Maintenance and XML Schema, in 13th ACM Proceedings of International Database Engineering and Application Symposium (IDEAS'09), Sept 2009, Italy.

Sedigh, S., Hurson, A.R., and Shirazi, B. Tools and techniques for interoperability and dynamic reconfiguration of pervasive systems. In M. Denko and M. S. Obaidat, editors, Pervasive Computing and Networking. John Wiley & Sons, 2010, to appear.

Sedigh S; and Hurson. A. R., "A pervasive framework for customizing course content to student needs", Proceedings of the 1st National Academy of Engineering Frontiers of Engineering Education (FOEE) Symposium, Nov. 2009.

Sedigh,S.; Emerging pervasive systems - research challenges and proposed solutions (panel). In Proceedings of the 33rd Annual IEEE International Computer Software and In Proceedings of the 33rd Annual IEEE International Computer Software and Applications Conference (COMPSAC '09) and Proceedings of the 9th Annual International Symposium on Applications and the Internet (SAINT '09), Seattle, USA, July 2009

Tripathi, A.; T Reddy, T.; Madria, S.; Mohanty, Ghosh, H.; R. K.: Algorithms for validating E-tickets in mobile computing environment. Inf. Sci. 179(11): 1678-1693 (2009).

Viyanon,W.; and Madria, S.; XML-SIM: Structure and Content Semantic Similarity Detection using Keys, accepted for 8th International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2009), Vilamoura, Algarve-Portugal, Nov 02 - 04, 2009.

2009 Publications by Research Area

Continued

Bioinformatics

Faculty: Ercal, Leopold

Publications:

Kazic, T.; Leopold, J.; and Maglia, A.; “Reasoning Over Anatomical Ontologies”, in Data Mining Applications Using Ontologies in Biomedicine, Mihail Popescu and Dong Xu (eds.), Artech House Publishing, 54 pages, (published in September 2009).

Lee, L.; Kandoth, C.; Leopold, J.; and Frank, R. “Protein Secondary Structure Prediction Using Parallelized Rule Induction from Coverings”, Proceedings of the International Conference on Bioinformatics and Bioscience Engineering (ICBBE 2009), Bangkok, Thailand, December 25-27, 2009 (accepted October 2, 2009).

Lee, L.; Leopold, J.; Frank, R.; and Maglia, A.; “A Computational Method for Identifying Non-Independent Patterns in Protein Motif Sequence Data for Secondary Structure Prediction”, Proceedings of the 2009 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology, Nashville, TN, March 30 - April 2, 2009, pp. 79-86.

Computational Intelligence

Faculty: Jagannathan, Hurson, Leopold, Liu, Tauritz, Wunsch

Publications:

Brannon, N.; Seiffertt, J.; Draelos, T.; and Wunsch II, D.; “Coordinated Machine Learning for Situation Awareness,” Neural Networks, 22(3), pp. 316 – 325, April 2009.

Cai, X.; Venayagamoorthy, G. K.; and Wunsch II, D.; “Evolutionary Swarm Neural Network Game Engine for Capture Go,” Neural Networks, to appear.

Dierks, T.; B. Thumati and Jagannathan, S.; “Fault Tolerant Control of Nonholonomic Robot Formations”, IGI's book "Intelligent Industrial Systems: Modeling, Automation and Adaptive Behavior" September 2009.

Dierks, T.; and Jagannathan, S.; “Neural network control of Quad rotor UAV formations”, Proc. of the American Controls Conference, pp. 2990-2996, June 2009.

Dierks, T. ; and Jagannathan, S.; “Optimal control of affine nonlinear discrete-time systems”, Proc. of the IEEE Mediterranean Conference on Control and Automation, pp. 1390-1395, June 2009.

Dierks, T. and Jagannathan, S.; “Neural network control of mobile robot formations using RISE feedback”, IEEE Transactions on Systems, Man and Cybernetics: Part B, vol. 39, no. 2, pp. 332-347, April 2009.

Dierks, T. and Jagannathan, S.; “Asymptotic adaptive neural network tracking control of nonholonomic mobile robot formations”, Journal of Intelligent and Robotic Systems: Special Issue, vol. 56, no.1-2, pp. 153-176, 2009.

Dierks, T.; Thumati, B.; and Jagannathan, S.; “Optimal control of unknown affine nonlinear discrete-time systems using offline-trained neural networks with proof of convergence”, Neural Networks, vol.22, pp. 851-860, 2009.

Dierks, T. and Jagannathan, S.; “Neural network output feedback control of robot formations”, IEEE Transactions on Systems, Man and Cybernetics: Part B, Accepted for Publication, April 2009.

Dierks, T. and Jagannathan, S.; “Adaptive control of mobile robot formations”, IEEE Transactions on Controls Systems Technology, Accepted for Publication, July 2009.

2009 Publications by Research Area

Continued

Dierks, T. and Jagannathan, S.; "Output feedback control of a quadrotor UAV using neural networks", IEEE Transactions on Neural Networks, Accepted for Publication, August 2009.

Thumati, B. and Jagannathan, S.; "Estimation and control of nonlinear discrete-time systems", Recent Advances in Intelligent Control Systems, Eds. Wen Yu, pp. 89-124, Springer-Verlag, May 2009.

Dierks, T. and Jagannathan, S. "Optimal tracking control of affine nonlinear discrete-time systems with unknown internal dynamics", Proc. of the IEEE Conference on Decision and Control, to appear in December 2009.

Dierks, T.; Thumati, B. and Jagannathan, S.; "Adaptive dynamic programming based optimal control of affine nonlinear discrete-time systems", Proc. of the IEEE International Joint Conference on Neural Networks, pp. 711-716, June 2009.

Du Plessis, L.; Xu, R.; Damelin, S.; Sears, M.; and Wunsch II, D.; "Reducing dimensionality of hyperspectral data with diffusion maps and clustering with K-means and fuzzy ART," International Journal of Systems, Control and Communications, to appear.

Hurson, A.R., Jean, E., Gao, X., Ongtang, M., Jiao, Y., and Potok, T.E., "Recent Advances in Mobile Agent-Oriented Applications". In When Computational Intelligence meets Mobile Paradigm, 2009, John Wiley & Sons, Inc. Chapter 6, pp. 106-139.

Kim, T.; Nisbett, J.; Wunsch II, D.; "Robotic Go: Exploring a different perspective on human-computer interaction with the game of Go," International Conference on Systems, Man, and Cybernetics, San Antonio, TX, USA, 2009.

Kim, T.; Pyeatt, L.; and Wunsch II, D.; "Reconfigurable Disruption Tolerant Routing via Reinforcement Learning," Proc. IEEE / INNS International Joint Conference on Neural Networks, Atlanta, GA, 2009.

Kim, T.; Sun, X.; and Wunsch II, D.; "Investigating the properties of cellular simultaneous recurrent networks," Proc. First Annual NSF EFRI Workshop, Rolla, MO, June 2009.

Kim T.; and Wunsch II, D.; "Estimation of String Safety in the Game of Go with Neural Networks in Cellular Structure," Thirteenth International Conference on Cognitive and Neural Systems, Boston University, Boston, MA, May 2009.

Kussul, E.; Baidyk, T.; and Wunsch II, D.; Neural Networks in Micromechanics, accepted by Springer-Verlag, proof pages complete. Estimated publication in 2009.

Leopold, J.; Coalter, A.; and Lee, L.; "A Generic, Functionally Comprehensive Approach to Maintaining an Ontology as a Relational Database", Proceedings of the 2009 International Conference on Ontological and Semantic Engineering (ICOSE 2009), Rome, Italy, April 2009, pp. 369-379 (published).

Lee, L.; Leopold, J.; Albath, J.; and Coalter, A. "An Ontology Abstract Machine", Proceedings of the 2009 International Conference on Ontological and Semantic Engineering (ICOSE 2009), Rome, Italy, April 2009, pp. 584-595 (published).

Mehraeen, S. ; and Jagannathan, S. "Decentralized control of large scale interconnected systems using adaptive neural network based dynamic surface control", Proc. of the IEEE International Joint Conference on Neural Networks, pp. 2058-2064, June 2009.

Mohan, D.; Saygin, C. and S. Jagannathan, "Real-time detection of grip length deviation during fastening of bolted joints: A Mahalanobis-Taguchi System (MTS) based approach", Journal of Intelligent Manufacturing, accepted for publication, to appear in 2009.

Nwamba, A.; and Tauritz, D.; Futility-Based Offspring Sizing. In Proceedings of GECCO 2009 - the Genetic and Evolutionary Computation Conference, pages 1873-1874, Montreal, Canada, July 8-12, 2009 (two-page poster abstract).

2009 Publications by Research Area

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Service, T.; and Tauritz, D.; Free Lunches in Pareto Coevolution. In Proceedings of GECCO 2009 - the Genetic and Evolutionary Computation Conference, pages 1721-1728, Montreal, Canada, July 8-12, 2009. Nominated for best theory track paper award.

Seiffert, J.; and Wunsch II, D.; "Backpropagation and ordered derivatives in the time scales calculus," IEEE Transactions on Neural Networks, to appear.

Robinette, P.; Seiffert, J.; Meuth, R.; Dolan, R.; and Wunsch II, D.; "An agent-based computational model of a self-organizing project management paradigm for research teams," Proc. IEEE / INNS International Joint Conference on Neural Networks, Atlanta, GA, 2009.

Robinette, P.; Meuth, R.; Dolan, R.; and Wunsch II, D.; "LabRat™: Miniature Robot for Students, Researchers and Hobbyists," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2009), St. Louis, October 2009.

Seiffert, J.; Mulder, S.; Dua, R.; and Wunsch II, D.; "Neural networks and Markov models for the iterated prisoner's dilemma", Proc. IEEE / INNS International Joint Conference on Neural Networks, Atlanta, GA, 2009.

Seiffert, J.; and Wunsch, D.; Unified Computational Intelligence for Complex Systems: Studies in Neural, Economic and Social Dynamics, accepted by Springer-Verlag. Estimated publication in 2010.

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Thumati, B.; and Jagannathan, S.; "A model-based fault detection and accommodation scheme for nonlinear discrete-time systems with asymptotic stability guarantees", Proc. of the American Controls Conference, pp. 4988-4993, June 2009.

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Thumati, B.; and Jagannathan, S.; "Neural network control of a class of nonlinear discrete-time systems with asymptotic stability guarantees", Proc. of the American Controls Conference, pp. 2934-2939, June 2009.

Thumati, B.; and Jagannathan, S.; "A multilayer neural network based identification and control scheme for a class of nonlinear discrete-time systems with asymptotic stability guarantee", Proc. of the IEEE Mediterranean Conference on Control and Automation, pp. 540-545, June 2009.

Vance, J.; Kaul, B.; Jagannathan, S.; and Drallmeier, J.; "Neuro-emission controller for minimizing cyclic dispersion of spark ignition engines with EGR levels", International Journal of General Systems, vol. 37, no. 6, pp.44-71, January 2009.

Wunsch II, D.; "ART properties of interest in engineering applications," Proc. IEEE / INNS International Joint Conference on Neural Networks, Atlanta, GA, 2009.

Xu, R.; and Wunsch II, D.; "Exploring the Nature of Unknown Data: Cluster Analysis and Application," in Handbook of Research on Machine Learning Applications and Trends: Algorithms, Methods and Techniques, E. Soria et. al. (Eds.), IGI Global, pp. 1-27, 2009.

Xu, R.; Damelin, S.; Nadler, B.; and Wunsch II, D.; "Clustering of high-dimensional gene expression data with feature filtering methods and diffusion maps," Artificial Intelligence in Medicine, to appear.

2009 Publications by Research Area

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Xu, R.; Xu, J.; and Wunsch II, D.; “MicroRNA expression profile-based cancer classification using default ARTMAP,” *Neural Networks*, vol. 22, pp. 774-780, 2009.

Xu, R.; Xu, J.; and Wunsch II, D, “Using default ARTMAP for cancer classification with microRNA expression signatures,” *Proc. IEEE / INNS International Joint Conference on Neural Networks*, Atlanta, GA, 2009.

Xu, R.; Du Plessis, L.; Damelin, S.; Sears, M.; and Wunsch II, D.; “Analysis of hyperspectral data with diffusion maps and fuzzy ART,” *Proc. IEEE / INNS International Joint Conference on Neural Networks*, Atlanta, GA, 2009.

Yang, Q.; and Jagannathan, S. “Adaptive creep and hysteresis compensation for nanomanipulation using atomic force microscope”, *Asian Journal of Control*, Special Issue in Nano Manipulation and Control, vol. 11, no. 2, pp. 182-187, March 2009.

Miscellaneous Publications

Hurson, A.R., and Sedigh, S., “A pervasive computing platform for individualized higher education”, In *Proceedings of the International Conference on Computational Intelligence and Software Engineering (CiSE '09)*, Wuhan, China, Dec. 2009.

Kaul, B.; Vance, J.; Drallmeier, J.; and Sarangapani, J.; A method for predicting performance improvements with effective cycle-to-cycle control of highly dilute SI engine combustion”, *Journal of Automobile Engineering*, *Proceedings of the Institution of Engineers-Part D*, vol. 223, pp. 423-438, 2009.

Leopold, J.; and Tauritz, D.; An Interactive Student-Driven Program to Facilitate Scholastic Achievement in Computer Science, Engineering, and Mathematics. In *Proceedings of the American Society for Engineering Education Annual Conference & Exposition*, Austin, Texas, U.S.A., June 14-17, 2009.

Mehraeen, S.; Jagannathan, S.; and Corzine, K.; “Energy harvesting from vibration with high voltage (>100V) scavenging circuitry and tapered cantilever beam”, *IEEE Transactions on Industrial Electronics*, accepted for publication, Oct 2009.

Donations From Alumni and Friends

Less than \$100

Alexander, Gary R	1970	Dam, Ha Thi	2005	Houseman, Valerie Anne	2007
Alexander, Mary C	1971	Daum, Marilyn S	1980	Hughes, Jason Michael	1995
Anderson, Glenn R	1973	Debner, David E	1968	Jecker, Gregory H	1973
Ashwell, Scott Wayne	1995	Derryberry, Darrell W	1985	Jeffries, Matthew S	1985
Ashwell, Tracey Dawn	1995	Doerer, Daniel Michael	1988	Johnson, Andrew J	1974
AuBuchon, F Joseph	1983	Drake, Michael Edward	1994	Kammer, Darren R	1991
Bardsley, David Scott	1984	Drewes, Laurie Ann	1985	Kelley, David D	1977
Becker, Kathryn A	1976	Drewes, Mark Kenneth	1985	Kern, Steven Gerard	1992
Beckmeyer, Russell R	1971	Dumaine, Willie	1994	Kielar, Gary A	1972
Bennett, Carol Ann	1992	Duncan, Thomas Shearer	1990	King, Janet M	1980
Bevans, Stanley Wayne	1985	Dunford, Randall B	1974	Kinser, Lynne D	1992
Bier, Patrick K	1975	Dunn, Clifton Delane	1984	Koontz, Kevin M.	
Bilbrey, Randall Carl	1986	Dziedzic, Charla C	1983	Kopinski, Thomas T	1985
Bilderback, Christopher Brian	2002	Dziedzic, Daniel A	1983	Krasner, Herbert C	1973
Bilderback, Rebecca Anne	2002	Edwards, Harry K	1964	Kuebler, Kenneth L	1970
Birdsell, Clifford J	1982	Erickson, Alan G	1975	Lahm, James L	1988
Blum, Anthony Franco	2005	Erickson, Christina K	1975	Langan, Barbara Ann	1989
Bohn, Ellen B	1974	Evans, Jesse D	1965	Langan, Robert Paul	1986
Booth, Brian David	1997	Farley, Kathleen E	1977	Langer, Richard B	1983
Bowen, William C	1978	Farley, Mary Ann	1984	Laramie, Raymond F	1972
Bowman, Charles S	1986	Farley, Stanton K	1978	Laufman, Anne E	1983
Brady, Amber Megann	1983	Ferrario, Patrick Christian	2005	Leach, David Bruce	1996
Brady, Kevin E		Fieseler, Wayne G	1981	Lenz, Richard G	1974
Breidert, Janice E	1973	Foehrweiser, Roger Keith	1987	Lenz, Sandra M	1974
Brenneke, Kenneth J	1978	Folta, Joseph E	1976	Lewis, Daniel Roy	2003
Brown, Daniel J	1974	Ford, Raymond F	1970	Lietz, Carol Ann	1982
Buckley, Jared Roger	1996	Frager, Alan R	1974	Lindstrom, John A	1973
Buehler, Douglas P	1979	Francis, David H	1975	Little, Russell D	1982
Burgdorf, Erik D	1980	Gaitros, Donald L	1966	Livaudais, Joan Marie	1986
Butler, Ralph M	1981	Galli, Donald H	1974	Livaudais, Ron Mark	1983
Butler, Tracye Denton	1985	Gavin, Darla Spencer	1986	Loesch, Janet L	1980
Byrd, Alicia Kathleen	1998	Giana, Fiorella	2005	Loesch, Kristen Louise	2007
Byrd, Samuel Martin	1998	Goetz, Carl Evan	1984	Loesch, Terry L	1980
Caldwell, Diane Marie	1986	Grant, Michael Joseph	1985	Ludwig, Karen S	1979
Canis, Walter	1972	Grose, Daniel W	1977	Ludwig, Michael F	1978
Chang, Jun-See Winress	1978	Grotefendt, Judith R	1974	Martin, Bennie F	1986
Chen, Emy A-Mei	1974	Grotefendt, Rande H	1973	McBride, Gregory C	1975
Clarkson, Ernest D	1974	Hammond, Patrick Lewis	2005	McCleary, Ronnie Neil	1973
Clifton, Arlene K	1972	Haring, James Donald	1989	McCormick, C Craig	1968
Cochran, Stephen Anthony	1992	Harrington, Daniel L	1983	McLaughlin, Ellen Couvillion	1989
Codespoti, Daniel J	1974	Harrington, Laura Ellen	1983	McLaughlin, Matthew Kevin	1992
Colter, Kim D	1973	Hayden, Bruce Jeffrey	1983	McNally, John Michael	1983
Compton, Laura Lynne	1990	Hayes, Kevin Brian	1988	Meier, Nancy Lyn	1984
Cooper, Charles J	1971	Herman, Lynn Marie	1987	Mersinger, Rozann P	1981
Coppinger, Jane Marie	1990	Herold, Lawrence W	1974	Messmer, Kevin Michael	1988
Coppinger, Timothy Andrew	1989	Hiebert, Gregory Lee	1982	Mills, Andy Ray	1989
Cordes, Glenn E	1960	Hiebert, Yoelit Hannah	1981	Mills, Edward L	1956
Cox, David Duane	1983	Hilleary, Alexander L	1976	Mitchell, Deborah Gay	1984
Cozad-Bolte, Raymond Joseph	1997	Hillhouse, Michael D	1975	Mitchell, John W	1983
Crane, Lynn Anne	1984	Holley, William Thomas	2008	Monsees, Robert L	1970
		Horstmann, Paul W	1973	Morrison, David W	1967

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Muo, James Nnamezie	2005	Schultz, Richard J	1973	Workman, J Douglas	1971
Nagawiecki, Amy Lynn	1984	Serban, Cristina	1993	Woytus, John Martin	1987
Nagawiecki, Gregory Edwin	1984	Settle, Benjamin A	1983	Wren, Frances K	1978
Nguyen, Minh Duc Ta	2002	Shaffer, Russell C	1969	Wurtzler, Pamela H	1981
Nichols, Adam Eugene	2007	Shi, Yuning	2000	Wuthnow, Debbie Ann	1985
Nichols, Byron K	1973	Simon, Dennis M	1976	Zenor, John J	1963
Novak, Stanley Frank	1986	Simon, Kimberly M	1976		
Oakes, Jack L	1990	Simpson, John Lawrence	1997		
Oldroyd, Juanice E	1983	Sinn, Elizabeth A	1976		
Olmstead, Randall David	1985	Sinn, Larry F	1975		
Olmstead, Sheila M	1985	Sisko, Bruce Peter	1987		
Omohundro, Warren C	1975	Snow, Bruce Floyd	1977		
Ortbals, Robert J	1978	Stager, Scott P	1970		
Otto, David L	1968	Stalnaker, Kevin W	1979		
Owensby, Roger Wayne	1986	Stanfield, James F	1996		
Pace, Gary Glen	1984	Starbuck, Jason Leon	1997		
Pankey, Tina Marie	2006	Stauffer, Jeffrey M	1973		
Parish, Melissa Kae	2005	Steffan, Michael Roy	1969		
Parish, Ryan Joseph	2005	Tadda, George P	1989		
Parrett, Alan V	1984	Tatum, Carolyn Joan	1982		
Parrett, Minh T	1979	Taylor, Charles Ray	1973		
Parthasarathy, Kasthurirangan	2005	Thill, Daniel Gerard	2003		
Parthasarathy, Murali	1995	Thill, Laura Maria	2000		
Paschke, Allen J	1975	Thoenen, James Joseph	2001		
Phillips, William Anthony	1993	Thomas, Gary W	1978		
Pickler, Diane	1986	Thorsell, Carl W	1969		
Pile, Thomas N	1979	Trampe, Michael Ronald	1993		
Post, Mark K	1978	Treptow, Eric B	1981		
Puhl, Joseph Albert	1982	Turley, Erica Lee	1995		
Puhl, Lisa Joan	1982	Turley, Matthew Linwood	1992		
Putz, Robert C	1964	Turner, Sherry L	1985		
Queern, John Kneeder	1981	Umphreys, Ray E	1974		
Rafferty, Patrick V	1975	Umstead, Christopher	1985		
Rainey, Karen Lynn	1998	Underwood, Diane E	1981		
Randall, Adonica D	1975	Van De Mark, Michelle M.S.	2006		
Randall, Harvey G	1974	Vandergriff, Matthew Wayne	1998		
Reedy, Geoffrey Edward	2004	Vasudevan, Archana			
Reinhardt, James Gerard	1986	Veden, Leonard S	1973		
Reini, Jennifer Ann	1987	Viessman, Rodney Bruce	1990		
Reunert, Philip Peter	1984	Vora, Chetan Bharat	1997		
Richesson, Jennifer Jo	1994	Wacker, Robert C	1977		
Robertson, Kevin Dale	1997	Wagner, Joyce Leigh	1988		
Robinson, Sally J	1987	Walker, Harry J	1973		
Rose, Jeffrey L	1975	Walker, John	1977		
Ruesing, Anthony Aloyes	2006	Walker, Rhonda A	1977		
Santos, Carmela R. C.	1996	Wegman, John L	1975		
Schaper, Gary E	1993	Wells, Curtis L	1970		
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Schuehler, David Vincent	1993	Wilkins, Arthur T	1978		
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Adams, Steven Richard	1982	Hicks, Richard Jay	1989	Pratt, Michael L	1978
Altheide, Phyllis	1985	Hilleary, Cynthia S	1976	Price, Clayton E	1980
Altheide, Richard W	1984	Hilliard, Anthony Wayne	2000	Pryor, Gary Alan	1995
Anderson, Phillip L	1985	Hock, John R	1982	Reedy, Karen M.	2005
Androlewicz, Thomas R	1977	Horstmann, Paul W	1973	Rehkop, Thomas G	1974
Antal, David D	1975	Howard, Steven R	1981	Reinhardt, Mary Jane	1986
Aparicio, Esteban	2005	Huff, Donald Leroy	1993	Rider, Adam Clinton	1993
Bailey, Wayne P	1976	Jain, Sunil Sarupchand	1996	Roth, Michael G	1972
Bardsley, Jeannine M	1983	Jansson, Jana Sue	1990	Rothschild, Susan H	1974
Beckmeyer, Margy A	1973	Jones, David S	1964	Sage, Barry E	1980
Bevans, Judy Kay	1985	Jones, James S	1974	Schafale, Richard G	1973
Boecker, Mark S	1974	Kammer, Sally A	1991	Scheer, John Albert	1988
Bogener, Shawn Robert	1996	Keep, Andrew William	1999	Scheidt, Douglas James	2002
Bousman, W Thomas	1968	Kennedy, Kelly Ann	1986	Scherer, Keith W	1982
Bremehr, Dan	1983	Kercher, Bruce Edward	1999	Scherer, Kenneth Paul	1982
Brewer, David W	1969	Kerns, Randy G	1974	Schroeder, Curtis Michael	1988
Brown, John M	1985	Kinser, Colby Evan	1988	Shaver, Brian Joseph	2005
Bruhn, Kurtis Matthew	1987	Kleikamp, David John	1986	Sigman, Scott Lee	1999
Burke, Terence Michael	1995	Klemmer, Susan H	1966	Sinn, Elizabeth A	1976
Carson, David J	1975	Lahm, James L	1988	Sinn, Larry F	1975
Chrisman, George F	1969	Levine, Michael Joseph	2000	Sirbu, Mihai G	1993
Codespoti, Daniel J	1974	Lewin, Karl E	1989	Smith, Brian Lynn	1987
Cook, Aaron L	1977	Liao, Ruijia	1996	Smith, Houstin G	1981
Cook, Thomas Edward	1985	Lindsey, Regulah M	1982	Smith, Neil S	1968
Cox, David Duane	1983	Loesch, Janet L	1980	Smith, Todd Walker	1985
Cox, Steven George	1998	Loesch, Terry L	1980	Squires Foelsch, Karen	1989
Crume, James L	1981	Lorenzen, Stanley D	1975	St. Clair, Mrs. Daniel (Jean) C.	1975
Dagestad, Pamela S	1978	Lyon, James S	1972	Stanek, Craig Steven	2004
Demieville, Cory Alan	2006	Maxwell, Shonie C.	1994	Steffan, Cheryl A	1969
Doerr, Jerry W	1967	McClanahan, Ronald D.	1977	Steiner, Robert M	1978
Drake, Sandra Jo	1993	McClenning, John C.	1991	Stone, John Edward	1994
Dupont, Steven J	1974	McMahon, Thomas P.	1995	Sullivan, Kevin Dennis	1995
Dvorak, Anthony Scott	2008	McNicholl, Daniel G	1980	Taylor, Robert P	1987
Ellis, Michael E	1976	Meier, Curtis P	1983	Taylor, Timothy Topper	1987
Fellows, William Joseph	1998	Menke, Elaine A	1973	Thompson, Ralph J	1969
Fieseler, Catherine N	1980	Menkel, Phillip Louis	1998	Thornton, Jeffrey A	1980
Fischer, Thomas W	1976	Miskell, Lynn Rene	1983	Toombs, Howard L	1976
Flynn, Daniel Brian	1993	Montague, Michael W	1973	Walker, Joseph D	1974
Forsee, Gary D	1972	Morey, Michael Garvin	1989	Wasleski, Steven Francis	1987
Freiberger, Keith	1984	Muldoon, Mary Ellen	1991	Watson, Lowell R	1979
Ganofsky, John R	1978	Musial, Christopher	1982	Watson-Hajjar, Susan Elaine	1983
Gavin, James Douglas	1987	Nau, Steven N	1970	Wickey-Spence, Janet Louise	1985
Geigel, Christopher S.	2000	Nekorчук, Russell L	1970	Williams, Nelson	1972
Gentry, Timothy W	1977	Newcomer, John	1989	Wittmaier, Charles Walter	1996
Goertzen, Patrick H	1982	Oellig, Galen R	1988	Wurtzler, Daniel R	1982
Gower, Marcia Sue	1989	Oligschlaeger, Brian J.	1995	Wylie, James Gerald	1969
Graham, David Brian	1983	Peetz, Bryan Dale	1983	Yelton, Ken Stuart	1986
Graves, Kyle Eugene	1991	Phipps, Neil Alan	2001	Zike, David Scott	1982
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