



Parberry to remain Interim Chair



Dr. Costas Tsatsoulis, Dean of the UNT College of Engineering, has announced that the Chair Search for the Department of Computer Science and Engineering has been unsuccessful and will be reopened in Fall 2010. Further, he announced that Dr. Ian Parberry has accepted his invitation to serve as Interim Chair for a second year. Dean Tsatsoulis thanked Dr. Parberry for his dedication to the CSE Department, faculty and UNT and looks forward to working with him in 2010-2011.

Greetings from the CSE Interim Chair

As the academic year closes, I want to share with you the news of your former department. As you can see from above, I will be Interim Chair for a second year and another search will be launched in Fall 2010.

ABET visited our department this year for the purposes of reaccrediting our B.S. in Computer Science degree. Rada Mihalcea received a Presidential Early Career Award for Scientists and Engineers (PECASE) and was honored at the White House by President Obama in January. Robocamp will offer several camps this summer. Our research labs have been active as you will read inside this newsletter. Our programming teams have had a successful year too.

Alumni support is important for our department. Please keep in touch and let us know what you are doing. We appreciate your support of CSE and UNT.

Ian Parberry
 Professor and Interim Chair

LARC in Top 50

The **Laboratory for Recreational Computing** (LARC—<http://larc.unt.edu>), directed by Dr. Ian Parberry, has been included in The Princeton Review's list of the Top 50 Undergraduate Game Design Programs. The Princeton Review is known for its annual college "bests" lists.

LARC has produced more than 50 students who work for a variety of computer game companies, including Terminal Reality, Paradigm Entertainment, Mumbo Jumbo and Barking Lizards. Three alumni have started their own gaming companies, three have written books and two are college professors.

Ph.D. student Jon Doran passed his Ph.D. dissertation proposal in April and had his first refereed journal publication accepted in *IEEE Transactions on Computational Intelligence and AI in Games*. The paper, "Controlled Procedural Terrain Generation Using Software Agents" was coauthored with Dr. Ian Parberry.

Rada Mihalcea honored at the White House



President Barack Obama joins recipients of the Presidential Early Career Awards for Scientists and Engineers (PECASE) for a group photo in the East Room of the White House on January 13, 2010. Dr. Mihalcea is to the President's upper right. (Official White House Photo by Lawrence Jackson)

Rada Mihalcea, Associate Professor in the Department of Computer Science and Engineering, was honored by President Barack Obama on January 13, 2010 as one of the winners of the Presidential Early Career Award for Scientists and Engineers (PECASE). This Award is the highest honor bestowed by the United States government on scientists and engineers in the early stages of their independent research careers.

Dr. Mihalcea was one of twenty PECASE awardees from the National Science Foundation who had

already been selected to receive the NSF Faculty Early Career Development (CAREER) Program. She was one of the 100 recipients of the PECASE award from ten government agencies. The awards, established by President Clinton in 1996, are coordinated by the Office of Science and Technology Policy within the Executive Office of the President. Awardees are selected on the basis of two criteria: Pursuit of innovative research at the frontiers of science and technology and a commitment to community service as demonstrated through scientific leadership, public education, or community outreach. Winning scientists and engineers receive up to a five-year research grant to further their study in support of critical government missions.

Robocamps offered in Summer 2010

The Texas Workforce Commission Summer Merit Program has awarded \$63,000 to the Department of Computer Science and Engineering to run six more Robotics and Game Programming Summer Camps in 2010. The Coordinating Board for Higher Education has also awarded the department approximately \$18,000 for camp programs to bring our total number of camps to ten. The program will also be using funds from a 2009-2010 Motorola Innovation Generation Grant of \$30,000 to initiate the Robocamp Jumpstart program, which will extend the program downwards into 7th and 8th grade student populations and train teachers at area schools to conduct the camps locally.



The Summer 2010 Robocamp sessions are coming up soon. There are ten Robocamp and XBOX camps scheduled for this summer. Students must be at least 14 years of age and not graduated High School in order to participate. We are also assisting with programs for Grandparents University for ages 7-12 and three mobile Robocamps at area schools as part of the new Robocamp Jumpstart program for 7th and 8th grade students. More details about Robocamp can be found at <http://www.cse.unt.edu/robocamp>.

UNT Research features CSE Faculty

UNT Research (<http://www.unt.edu/untresearch>) is a UNT publication that focuses on science, scholarship and the arts at UNT. In the Initiatives section, read about how UNT is planning to expand its research impact to gain from a new state of Texas program which will help seven emerging research universities become the next generation of national research universities.

"Researchers Use Simulations to Forecast Disease Outbreaks" features Associate Professor **Dr. Armin Mikler**. **Marty O'Neill II** and **Jorge Reyes**, current CSE doctoral students, and **Courtney Corley**, CSE Ph.D. graduate in August 2009, are also included in this *UNT Research* article.

Associate Professor **Rada Mihalcea** is in the Awards section of *UNT Research* as a "Top Young Scientist" for her NSF CAREER and PECASE awards. Dr. Mihalcea is also recognized again in the News Brief section as a UNT Honors Faculty.

Dr. Krishna Kavi, Professor, is featured in "UNT Leads NSF Center for Networks of the Future," which explains how the National Science Foundation Industry/University Cooperative Research Center is creating cutting-edge software to make complex networks possible.

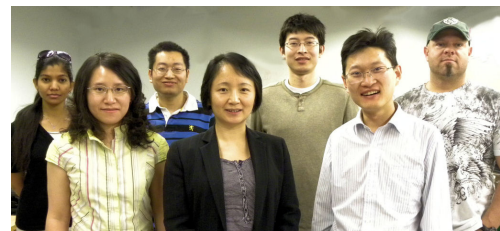
New CSE Faculty

Mahadevan Gomathisankaran

joined the CSE Department as an Assistant Professor in Fall 2009. Dr. Gomathisankaran holds a B.E. in Electronics and Communication Engineering from Regional Engineering College, Trichy, India, and a Ph.D. in Computer Engineering from Iowa State University where his research concentrated in secure computer systems architecture.

Dr. Gomathisankaran did his post-doctoral research at Princeton University where he did research on developing a testing framework using virtualization technology. Dr. Gomathisankaran has worked as software engineer at Philips and Texas Instruments and as a Research Scientist at Intel.

The Trusted Secure Systems Laboratory (<http://tssl.cse.unt.edu/tssl>) is directed by Dr. Gomathisankaran and conducts research on building trusted and secure computing systems.



IMKD: Front row (L-R): Ning Luo, Dr. Yan Huang, Peng Sun. Back row (L-R): Roopa Vishwanathan, Chengyang Zhang, Shu Chen, Terry Griffin.

Dr. Yan Huang directs the **Information and Knowledge Management and Discovery Lab**. Chengyang Zhang received the Outstanding Ph.D. Student in Computer Science and Engineering award at Honors Day on April 9. Chengyang joined IMKD lab in Fall 2006, and has since published 15 papers at peer reviewed conferences and journals. He is currently working on his Ph.D. dissertation that brings novel contributions to the area of geospatial data stream processing.

The paper titled "A Two-level Protocol to Answer Private Location-based Queries" authored by Ph.D. student Roopa Vishwanathan and Dr. Yan Huang received the "Best Paper Honorable Mention" award at the IEEE International Conference on Intelligence and Security Informatics (ISI), 2009.

Peng Sun is a visiting scholar from the Spatial Information Processing Technology Lab, Institute of Computing Technology, Chinese Academy of Science (CAS). He will be visiting the IMKD lab from November 2009 to August 2010. At the IMKD lab, he is working on integrating selective functionalities of spatial data mining to a spatial database system. He is learning all the features of an open source spatial database management system. At the end of Peng's research project, the system will be able to perform certain spatial data mining tasks in a seamless manner.

Ph.D. student Terry Griffin passed his qualifying exam in March 2010. Terry recently published a paper titled "Intelligent System for Locating, Labeling, and Logging (ISL3)" in the proceedings of the Twenty Second International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems. Terry is working on predicting a user's trip purpose from his/her GPS trajectories.



CSE Research Lab News

Nanoscale Energy-Efficient VLSI Research from NanoSystem Design Laboratory (NSDL—<http://nsdl.cse.unt.edu>) Dr. Saraju P. Mohanty, NSDL Director, received multiple grants to support NSDL's research in nanoelectronics. One NSF (National Science Foundation) grant of \$249,265 spanning over 2009-2012 supports "nano-CMOS modeling" research. Another NSF grant of \$200,000 supports "nano-CMOS estimation" research. Dr. Mohanty internationally collaborates with the University of Bristol on a EPSRC (Engineering and Physical Sciences Research Council) grant of £285,394 that supports "nano-CMOS synthesis" research. For progression of his research from power to thermal, Dr. Mohanty received a SRC (Semiconductor Research Corporation) research grant of \$105,000 spanning over 2009-2012 to study PVT-Tolerant RF (Radio Frequency) circuits.

NSDL members have published 5 journal and 15 conference papers in the last academic year. Two papers titled "A P4VT (Power-Performance-Process-Parasitic-Voltage-Temperature) Aware Dual-Vth Nano-CMOS VCO" and "A Combined DOE-ILP Based Power and Read Stability Optimization in Nano-CMOS SRAM" were presented at the 23rd IEEE International Conference on VLSI Design were held in Bangalore, India.

Nanoscale SRAM (static random access memory) research by NSDL members got significant recognition. Members of NSDL presented multiple papers at the IEEE International Symposium on Quality Electronic Design (ISQED), San Jose, CA: "A 2-Port 6T SRAM Bitcell Design with Multi-Port Capabilities at Reduced Area Overhead" and "P3 (Power-Performance-Process) Optimization of Nano-CMOS SRAM using Statistical DOE-ILP". Dr. Mohanty was also invited to chair a session titled "SRAM Manufacturability" in the same conference.

To set a roadmap of integrating these SRAM circuit in system-level cache design, a master thesis research was conducted in NSDL. Ms. Ruchi Rastogi defended her thesis last semester: "A New N-Way Reconfigurable Data Cache Architecture for Embedded Systems." This thesis led her to receive the Outstanding Master's Student in Computer Engineering Award for year 2009-2010. In addition, Ruchi received an International Education Committee Scholarship Award.

The Net-Centric Software and Systems Industry/University Cooperative Research Center held



its Industrial Advisory Board meeting on April 1-2. NSF program managers were on hand to explain the IUCRC concept. Industrial members gave testimonials about current projects and academic members made project presentations. At the end, industrial members selected projects to fund.

Industrial members include Boeing, Cisco, Codekko, EDS/HP, GlobeRanger, Hall Financial Group, Lockheed-Martin Aero, Raytheon, Texas Instruments, and T-System. Academic members include Southern Methodist University, University of North Texas, and University of Texas at Dallas.

"Net-Centric Computing-UNT leads NSF Center for networks of the future" about Dr. Krishna Kavi and the IUCRC recently appeared in *The Chronicle of Higher Education*. More information is available at <http://netcentric.cse.unt.edu/>.



(L-R) Oleg Garitselov, NSDL Director Saraju Mohanty, Garima Thakral, Mohana Asha Latha Dubasi with their new cutting-edge nanoelectronics design and simulation facility.

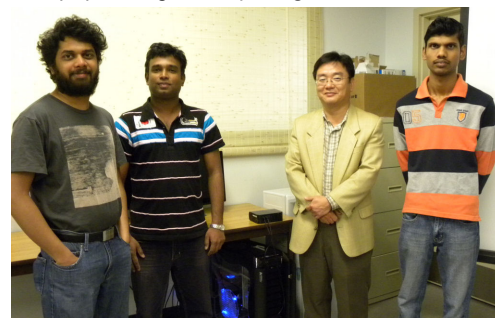
News from the Multimedia Information Group (MIG): Dr. JungHwan Oh, MIG Director, served on program committees for the third International Conference on Advances in Semantic Processing (SEMAYRO 2009), October 11-16, 2009 in Sliema, Malta.

MS student Avnish Rajbal Malik, who graduated Summer 2009, is working for Verizon Communications in New York, NY. Ph.D. students Ruwan Dharshana Nawarathna and Jayantha Kumara Muthukudage are working as research assistants. One MS student, Venkata Praveen Karri, will graduate this summer.

In this past year, MIG has published one journal and four conference papers and successfully completed two projects funded by the National Science Foundation ("Video Analysis Techniques for Computer-Aided Quality Control for Colonoscopy") and University of Bridgeport in Connecticut ("Developing Smart View Module in Wireless Capsule Endoscopy Videos"). MIG is continuously working on a project ("Computer-aided Diagnosis for Gastrointestinal Bleeding using Wireless Capsule Endoscopy") funded by Texas ARP/ATP.

Two new grants have been funded by the National Science Foundation and the National Institute of Health as follows: "Toward Real-Time Computer-Aided Quality Monitoring of Colonoscopy," from NSF STTR IB (University partner), and "Improving Colonoscopy Quality through Automated Monitoring" from the National Institute of Health.

In February, Dr. JungHwan Oh was featured in a UNT press release about his research to improve colon cancer screening. Dr. Oh's research also appeared in the March 2010 issue of the UNT Insider. For more information on the Multimedia Information Group, please go to <http://mig.cse.unt.edu/>.



MIG members (L-R) Venkata Praveen Karri, Ruwan Nawarathna, Dr. JungHwan Oh, and Jayantha Kumara with their multicore CPU & GPU system.

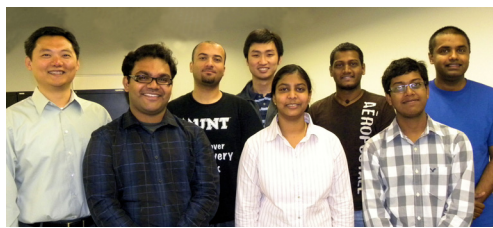
Research Lab News (continued)

Network Security Lab (NSL—<http://nsl.cse.unt.edu>) News — In December 2009, Santi Phithakkitnukoon successfully defended his Ph.D. dissertation titled “Inferring Social and Internal Context using a Mobile Phone” and Paul Sroufe successfully defended his M.S. thesis “Email Shape Analysis.” Santi is currently a post doctoral research fellow at the MIT *SENSEable City Lab* working on several projects dealing with mining large digital footprints to understand the context of a city. Paul Sroufe is currently working as a system administrator for the UNT College of Engineering.

Vikram Chandrasekaran was honored with the Outstanding Master’s Student in Computer Science award for 2009-2010. In April, Kalyan Pathapati Subbu, another Ph.D. student who joined in Fall 2009, passed his qualifiers and defended his dissertation proposal “A Mobile phone based Indoor Navigation system for the blind.” Also in April, Huiqi Zhang successfully defended his Ph.D. dissertation titled “Social Groups and Event Detection.” Zhang will be presenting his work at a workshop at MIT. Undergraduate student Brett McCormick has served as the NSL lab assistant responsible for system administration and inventory since January 2010.

In December 2009, Dr. Ram Dantu represented the UNT delegation to India and visited prestigious institutions like the IIT, IISc and BARC for research collaborations. He also represented the U.S. team to India for a joint workshop on research collaboration in Infrastructure Security organized by the NSF.

Dr. Dantu presented two papers at COMPSNETS’2010. Enkh-Amgalan Baatarjav presented two papers at CCNC 2010. Two new Ph.D. students, Neeraj Gupta and Fazeen Mohamed, are working on 9-1-1 protocols, online social networks, and vehicle diagnostics respectively. Dr. Zuoming Wang from the Communication Studies department at UNT collaborates with Dr. Dantu on proposals to the National Science Foundation.



(L-R) Xiaohui Yuan, Jarvie Samuel, Mohamed Abouelenien, Dongyu Ang, Madhavi Gummadi, Sandeep Panchakarla, Vayunandan Velivela, and Balathasa Giritharan

CoVIS (Computer Vision and Intelligent Systems Lab— <http://covis.cse.unt.edu>) After studying in CoVIS on LiDAR and image segmentation for 2 years, Vaibhav Sarma has successfully completed his M.S. program and defended his thesis in July 2009. He is currently with MapFrame Co. in Dallas, TX. Balathasan Giritharan received a fellowship to present his work in the SECNAS conference in Dallas. Most recently, he submitted his first proposal to the Department of Justice. Jarvie Samuel is completing his M.S. program and plans to defend his thesis in May 2010. Three graduate students joined CoVIS: Mohamed Abouelenien, Vayunandan Velivela, and Madhavi Gummadi.

Dr. Xiaohui Yuan, CoVIS Director, received a NSF funded project “Infusing Advanced Sensor Network Research into Cross-disciplinary Undergraduate Education” to develop novel learning materials with advanced sensor technologies. This is a collaborative project with the University of Houston. He serves as a committee member in the ICCCNT’10 conference.



CERL research group (L-R): Chetan Tiwari, Assistant Professor in the Geography Department; Oleg Kolgushev; Marty O’Neill; Tamara Schneider; David Keathy; CERL Director Armin R. Mikler; Angel Bravo-Salgado holding newest CERL member, Maxlav Gomez-Lopez; Iris Gomez-Lopez, mother of Maxlav; and Jorge Reyes Silveira.

Computational Epidemiology Research Laboratory (CERL): Tamara Schneider, Marty O’Neill II, and Angel Bravo-Salgado are working on a \$60,000 contract with Tarrant County Public Health to analyze their biological emergency plans. This follows an initial contract completed last year during which new techniques to analyze the distribution of medication following an Anthrax attack were developed. In February, O’Neill described their progress in an 80 minute interactive session at the Public Health Preparedness Summit in Atlanta, Georgia.

USA Today published an article on research led by CERL alumnus Courtney Corley. In this research, terabytes of blog data were mined in an effort to monitor influenza. A high correlation between his results and surveillance data from the U.S. Centers for Disease Control and Prevention (CDC) was found. Corley is now at Pacific Northwest National Laboratory (PNNL) in Richland, WA.

The CERL will be hosting two Texas Academy of Math and Science students this summer. Doctoral student Jorge Reyes will guide them as they develop disease outbreak models.

The installation of a new stereo 3D projection wall has been completed in the Environmental Science building which will be used as part of the Center for Computational Epidemiology and Response Analysis. This wall will be used to foster data exploration in collaboration with researchers in Geography, Biology, and Public Health. A computer laboratory was also installed in the School of Public Health at the UNT Health Science Center (Fort Worth). This new laboratory is also outfitted with a smaller stereo 3D projection screen as well as computers and videoconferencing equipment to enable collaboration with researchers in the CERL.

Dr. Armin R. Mikler is the Director of CERL. For more information, go to: <http://cerl.unt.edu>.

Members of the **LIT (Language and Information Technologies—**<http://lit.csci.unt.edu>) research group are actively working on research projects in natural language processing. Among the highlights for 2009-2010:

In December 2009, Kino Coursey graduated with a Ph.D. in Computer Science and Engineering. He successfully defended his dissertation in October 2009, on “The Value of Everything: Ranking and Association with Encyclopedic Knowledge.” (major professor: Rada Mihalcea; committee members: Paul Tarau; William Moen; Doug Lenat; Michael Witbrock.)

In February 2010, the LIT group hosted the regional competition for the 2010 North American Computational Linguistics Olympiad. Over 40 high school students from North Texas participated in the competition at the UNT location. NACLO is an educational competition in Computational Linguistics, the science of designing computer algorithms to solve linguistic problems. Rada Mihalcea received a new NSF research grant to study word sense and multilingual subjectivity (\$450K, in collaboration with U. Pittsburgh).”

Alumni Focus: Chris Pearce

Chris attended UNT from 1985 to 1990 and graduated with a Bachelor of Science in Computer Science and a Bachelor of Arts in English Composition. Upon graduation, he went to work as a software engineer for InteCom, Inc., an Allen-based company that he learned about through UNT’s Career Center.



As a software engineer, Chris helped develop features for the IBX, InteCom’s private branch exchange (PBX) product. PBXes are enterprise-oriented telephone systems that provide extensive suites of features to end users, from simple features like call transfer to complex applications such as call centers.

The late '90s were a revolutionary time in computer technology, as the Internet was transforming from a primarily academic and military network to a pervasive medium for connecting all types of users. Enterprise telephony was also affected by the Internet’s ascendance.

In 1997, Chris joined a small team to help design a PBX that, rather than running in a standalone mainframe computer, ran on a standard computer server and communicated with phones over a standard Internet Protocol (IP) network. This new architecture meant that companies only needed to wire their buildings with a single set of wires, and it permitted enterprise IP-based telephones to benefit from the same sorts of Internet applications the World Wide Web made available to personal computers.

In 1998, Cisco Systems, Inc., acquired the software and developed it into Cisco Unified Communications Manager. To date, Cisco has shipped systems with over 20 million phones, and Cisco phones have been on every continent, including Antarctica, as well as outer space. (Notably, on September 11, 2001, Cisco’s IP-based phone system was one of the few phone systems that did not collapse due to congestion and the system was used to help coordinate enterprises’ emergency response.)

Chris has since authored the book *Cisco CallManager Fundamentals*, in its second edition, and is holder of 22 software patents. He is now a Cisco Distinguished Engineer and continues to shepherd the growth of Cisco Unified Communications Manager.

When not analyzing new technologies and planning feature implementation architectures, Chris spends time with his partner of 21 years (and fellow UNT alumnus), Clay Luther, and their two dogs. They live in Dallas, Texas.

Share your news with other alumni! Send an email to: csenewsletter@unt.edu.

To see our CSE Outstanding Students for 2009-2010, go to:

http://www.cse.unt.edu/people/2009-2010_Outstanding_CSE_Students.pdf

CSE Programming Team competes in China



The CSE programming team of (L-R) **Daniel Hooper**, **Robert Mitchell-Burke** and **James Pascoe** competed in the Battle of the Brains, an international computer programming competition sponsored by IBM and the Association for Computing Machinery International Collegiate Programming Contest. The competition was held February 1-6 at Harbin Engineering University in northeast China. CSE doctoral student Michael Mohler coached the team. Dr. Ryan Garlick is the Faculty Advisor and accompanied the team to China.

The UNT programming team finished in 86th place out of 103 teams. The team qualified for the competition after placing second to UT Austin at the regional contest in Oklahoma in October 2009, but went on to place higher than their regional rival at the world finals in China.

Texas Codeboys ride back to Budapest



(L-R) John Rizzo, Robert Mitchell-Burke and Michael Mohler in Budapest.

The Texas Codeboys qualified for the fourth year for the Challenge24 final round competition in Budapest, Hungary by placing third in the online qualifying round held in February. They are the first and only U.S. team to qualify for the final round in the ten year history of the contest. The next closest U.S. team this year finished in 136th place. The top 30 teams that qualify for the final round are chosen from over 190 teams that competed in the qualifying round.

The Texas Codeboys are CSE Ph.D. student **Michael Mohler**, undergraduate student **Robert Mitchell-Burke**, and CSE alumnus **John Rizzo**. In 2006 and 2007, CSE alumnus Jack Lindamood was a Codeboy in Budapest. Robert Mitchell-Burke became a Codeboy in 2008 and 2010. In the final competition held in early May, the Codeboys finished in 22nd place.

NorthTexas CSalumni on Facebook

The UNT Computer Science and Engineering Department now has a presence on Facebook. You can visit our Facebook page and become an alumni friend by visiting <http://www.cse.unt.edu/facebook.html>. Warren Moseley, M.S. 1984, Ph.D. 1987, recently posted that he would like to hear from grad students from 1982 to 1987. If you know Warren, you can contact him through our CSE Facebook site.

Facebook has several other UNT Alumni pages, including the UNT Alumni Association. You can visit their page at <http://www.facebook.com/UNTAlumniAssociation>. Meet old friends by joining the CSE Alumni Facebook now!

To receive our newsletter by email three times a year, please register at:

<http://www.cse.unt.edu/site/node/71>

To update your information, go to:

<http://www.cse.unt.edu/site/node/70>

To see our alumni newsletter archive, go to:

<http://www.cse.unt.edu/site/node/69>

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