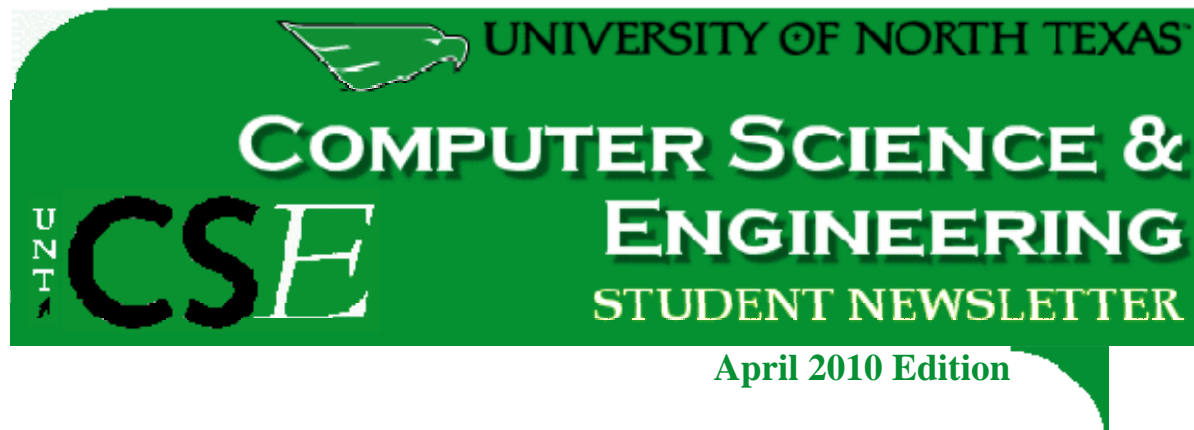


From: csenewsletter@unt.edu
Sent: Tuesday, April 13, 2010 2:09 PM
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Subject: April 2010 CSE Student Email Newsletter

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Greetings from the CSE Interim Chair

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. Arizona State University is planning to join the academic members within the next year.

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

Sweany receives funding from NSF Netcentric IUCRC

Dr. Phil Sweany, CSE Associate Professor, received a second year of funding from the IAB for "Retargetable Code Generation for Heterogeneous Multi-Processor Computers". In this project he will continue development of the Hy-C tools targeting hybrid architecture supplied by industrial partners. To evaluate the code generation strategy, he will run both MiBench programs and the Android application on client-provided architectures.



The goal of Dr. Sweany's project is experimental determination of how well a retargetable compiler for hybrid architectures can generate code for a diverse group of architectures and applications. The expectation is that Hy-C will provide 20% better "performance" than current software solutions on the same architectures. The project defines performance as meeting application constraints, which may focus on some combination of runtime, application size, and power requirements.

Dr. Sweany will direct this project along with Dr. I-Ling Yen, Professor of Computer Science from the University of Texas at Dallas. ↑

Nanoscale SRAM Research from VLSI Design and CAD Laboratory Gets Recognition



Dr. Saraju Mohanty and Garima Thakral, Ph.D. candidate, with their poster in ISQED 2010, San Jose, CA.

Members of VDCL present multiple papers in a highly-selective double-blind reviewed conference. These papers describe a new design of static random access memory (SRAM) that new generation high-performance and low-power consuming microprocessors need in their cache. The following paper was presented as a 30 minute oral talk:

J. Singh, D. S. Aswar, **S. P. Mohanty**, and D. K. Pradhan, "A 2-Port 6T SRAM Bitcell Design with Multi-Port Capabilities at Reduced Area Overhead", in *Proceedings of the 11th IEEE International Symposium on Quality Electronic Design (ISQED)*, pp. 131-138, 2010.

In addition, the following paper was presented as a poster with brief oral presentation (see picture above): G. Thakral, **S. P. Mohanty**, D. Ghai, and D. K. Pradhan, "P3 (Power-Performance-Process) Optimization of Nano-CMOS SRAM using Statistical DOE-ILP", in *Proceedings of the 11th IEEE International Symposium on Quality Electronic Design (ISQED)*, pp. 176-183, 2010.

Dr. Mohanty was also invited to chair the session titled "SRAM Manufacturability" in the same conference. This demonstrates strong recognition by the peer researchers of the cutting-edge nanoscale CMOS based SRAM design research that VDCL is undertaking.

To set a roadmap of integrating these SRAM circuit in system-level cache design, a master's thesis research was conducted in VDCL. Ms. Ruchi Rastogi defended the following 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.

The VDCL group received another recognition when their research was reported in UNT presidential report for the year 2009 under "Energy-efficient Chips." ↑

Vikram Chandrasekaran is originally from India. He received his B.E. from Anna University, India and will be receiving his M.S. in Computer Science in August 2010. He is currently working as a research assistant for Dr. Ram Dantu.



Vikram specializes in computer networks with his core focus on Voice over IP and data communications. He has recently published papers on his works involving peer to peer networking with social hashing and social aspects of video phones. Some of his works include data routing based on social networks, hole specification for location to service translation system, media control for mobile phones and bio-medical diagnostics with mobile sensors. He has been collaborating with researchers from Columbia University, Texas A&M University and worked on identifying deadzones with Denco 9-1-1 service center.

As his major Professor, Dr. Dantu has high influence on his works and has helped Vikram over the past years. For that, Vikram would like to say, "Thank you Dr. Dantu, I couldn't have done it without you!" Vikram is working on his thesis and planning his defense in summer. ↑

Outstanding Master's Student in Computer Engineering – Ruchi Rastogi Bani

Ruchi Rastogi Bani always wanted to make her hometown Nowgong (Central India), feel proud about her achievements because very few from this town had come so far. She received her Bachelor of Engineering in 2001 in Electronics. She pursued her career in the same field by working as a Lecturer for her favorite subject VLSI. She then moved to UNT in Fall 2008 to complete her Masters with specialization in the same field. With proper guidance from Dr. Saraju Mohanty and Dr. Elias



Kougianos, she was able to complete her Masters with thesis in three long semesters only. During her UNT stay, she thoroughly enjoyed working in the Environmental Science Lab, General Access Lab and as a Teaching Assistant in the Computer Science and Engineering Department.

Ruchi defended her thesis titled "A New N-Way Reconfigurable Data Cache Architecture for Embedded Systems" in October 2009. She also received three scholarships based on her performance. She contributed to multiple projects running in VLSI design and CAD Laboratory (VDCL). She would like to say thanks to the entire staff of the CSE department, her family and friends for all their support.

In her spare time, Ruchi enjoys cooking and spending time with friends. Currently she is in India and will always remember her time in Denton. ↑

Outstanding Doctoral Student in Computer Science and Engineering – Chengyang Zhang

Chengyang Zhang is originally from Anhui, China. He received both of his B.S. in Electrical Engineering and M.S. in Computer Engineering from Beijing University of Science and Technology. He is currently working with Dr. Yan Huang as a research assistant. His research interests include data streams, spatial databases and data mining, location-based services and wireless sensor networks. Chengyang has published 15 papers at peer reviewed international conferences and Journals. He has served as registration chairs and reviewers for many conferences, such as ACM SIGSPATIAL GIS and SIGKDD.



In 2009, Chengyang visited Microsoft Research Asia (MSRA) in China for a summer internship. During the period he coauthored two papers and one patent. Later he received the certificate of "Star of Tomorrow" from MSRA. He also won the Academic Achievement Scholarship in 2006 and 2007, the USC College of Engineering Scholarship in 2008, the Lucille Murchison Graduate Scholarship in 2009, and the Doctoral Dissertation Fellowship from 2009 to 2010. Chengyang is a member of IEEE and ACM SIGSPATIAL. He is currently working on his Ph.D. dissertation that brings novel contributions to the area of geospatial data stream processing. ↑

Outstanding Students recognize Faculty Members at Honors Day

These CSE faculty members were recognized at Honors Day: Dr. Robert Brazile, Dr. Ram Dantu, Dr. Yan Huang, Mr. David M. Keathly, and Dr. Armin R. Mikler.

Congratulations to these faculty members on receiving this honor. ↑

Robotics Society News