

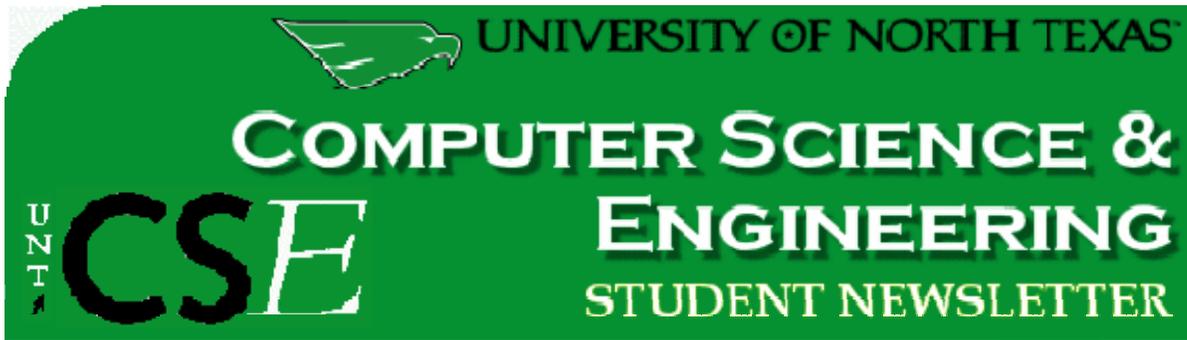
## Mohanty, Saraju

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**To:** CSEInstructors  
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## Greetings from the CSE Chairman

Dear CSE Students,



I hope Spring 2009 has been a productive semester for you. It has been a busy semester for our CSE Department. On April 1, UNT approved three new centers and faculty members in the CSE Department are heading two of those centers. This semester the Texas Workforce Commission and the Texas Higher Education Coordinating Board have given grants for programs in our CSE Department. You can also read in this newsletter what's happening in some of our CSE research labs.

Congratulations to our outstanding students who were recognized at UNT Honors Day. We look forward to another summer of RoboCamp and you can read all the details below. We are pleased that the CSEagles program is continuing to grow. This program started with 5 students in the program and has grown to over 20. Dr. Sweany accompanied six CSE students to the CCDC competition during Spring break. We welcome two new staff members to our CSE Department.

Finally, to our graduating students, I wish you the best of luck in your future. Please keep in touch with us by registering your contact information on the alumni page of our website. In the future, send us an email and let us know what you are doing. After you graduate, I hope you will continue to support our CSE Department and the University of North Texas.

Krishna M. Kavi  
Professor and Chair

## Department of Computer Science and Engineering News

### UNT approves New Centers

On April 1, the Provost and the Deans' Council approved the establishment of the **Net-Centric Software and Systems Center** and the Center for Computational Epidemiology and Response Analysis. Dr. Krishna Kavi,



Chairman of the CSE Department, proposed the Net-Centric Software and Systems Center which has received support from the National Science Foundation. This Center is a consortium of three universities and eleven companies which have joined together to create cutting-edge software accessible over electronic networks. See this article about the consortium in the [Dallas Business Journal](#). For more information, go to <http://netcentric.cse.unt.edu/>.

**The Center for Computational Epidemiology and Response Analysis (CeCERA)**, which was also approved by the Provost and Deans' Council, will bring together the Departments of Geography, Computer Science and Engineering, and Biology, and the UNT Health Science Center's Department of Biostatistics. Dr. Armin Mikler, Associate Professor in the CSE Department, is Director of CeCERA. In 2005, Dr. Mikler founded CERL (Computational Epidemiology Research Laboratory) which was the seed for the CeCERA. For more information on this new center, read this [UNT press release](#). ↑

### **Dr. Ryan Garlick featured in "Code Breakers"**

The National Geographic program "**Code Breakers**" features **Dr. Ryan Garlick**. This program aired on the National Geographic channel on March 1, 2009 and can be seen [here](#). The program is about the science behind the secrecy and cracking of codes, how codes work, why we need them, and how they changed the course of history.



Dr. Garlick is featured because of his and the CSE Department's research into the famous Zodiac "340 Cipher" that has never been solved since the Zodiac killer confounded investigators back in 1969. To see Dr. Garlick in action, go to this [media gallery page](#). ↑

### **TWC Grant expands CSE Recruiting and Retention**

The **Texas Workforce Commission** awarded \$152,393 to expand the recruiting and retention efforts of the Department of Computer Science and Engineering. The University of North Texas will coordinate activities for recruiting and retaining women and minority students in Computer Science and Engineering (CSE) programs at UNT. The project will



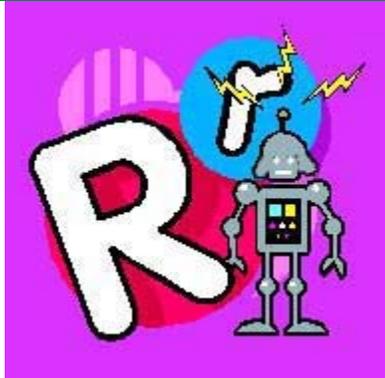
provide \$4,000 scholarships for 15 students who previously attended summer computer science robotics camps and wish to study computer science and engineering at UNT.

UNT will expand their CSEagles Ambassadors and Mentors program, which uses current UNT female students, to include male students, as a form of outreach to area middle schools and high schools, as well as to expand the support group for incoming freshman and transfer students from underrepresented populations. UNT will provide Engineering Workshops to high school guidance counselors and teachers for hands-on experiences in computer science and engineering topics.

Investigators for this project are Dr. Robert Akl, Associate Professor and co-director of the camps; Dr. Krishna Kavi, Chair of the CSE Department; and Mr. David Keathly, lecturer and advisor and co-director of the camps. ↑

### **Robocamp receives Grant to add Game Design and Programming**

The CSE department was awarded \$11,111 from the Texas Higher Education Coordinating Board to add a pilot one-week game design and programming summer camp for high school students to the set of Robotics Camps that it currently hosts every summer. The camp will be organized around team, project-oriented activities that utilize a number of resources, including laptops, XNA Framework (which is provided by Microsoft), and Xbox 360 gaming consoles. By using gaming as the backdrop, students will learn coding and programming principles and develop an understanding of the role of physics and mathematics in game design, including car-racing games, side-scrolling platform games, and role playing games.



For more information about this new camp and a complete listing of Robocamps for summer 2009 please visit <http://www.cse.unt.edu/robocamp>. ↑

### **LARC News in Spring 2009**



(L-R): Robert Krause, Joshua Taylor, Vincent Liguori, Faisal Rabbani, Dr. Ian Parberry, Mary Yingst

UNT's **Laboratory for Recreational Computing (LARC)**, directed by Professor Ian Parberry, is now in its 16th year of operation. With the news this month that Christopher Jantze landed a game programming job at Zynga developing games for Facebook and Myspace, LARC now has had 50 alumni get jobs in the game industry. For a full list of LARC alumni in the game industry, see <http://larc.unt.edu/alumni.html>.

In Spring 2009, the Graduate Committee of UNT's Department of Computer Science and Engineering approved a Master's level track in game programming. Students in this track need to take 3 core game programming classes, CSCE 5250 (Intro to Game Programming), CSCE 5260 (3D Game Programming), and CSCE 5265 (Advanced Topics in Game Development), along with 2 supporting courses from a list of courses relevant to game programmers. Full details of the track are available on <http://www.cse.unt.edu/education/grad/GameProgramming.pdf>.

Starting in Fall 2009, UNT's Department of Computer Science and Engineering will offer an undergraduate Certificate in Game Programming. To participate in the certificate, students will need to complete four game programming classes: CSCE 4210 (Game Programming I), CSCE 4215 (Game Math & Physics), CSCE 4220 (Game Programming II), and CSCE 4250 (Topics in Game Development). CSCE 4215 is a new class that will be offered for the first time in Fall 2009.

LARC Director Ian Parberry was recently named Associate Editor of two new academic journals, *Entertainment Computing* and *IEEE Transactions on Computational Intelligence and AI in Games*. For all the news about the Laboratory for Recreational Computing, please go to <http://larc.unt.edu/>. ↑

**Dr. Mohanty appointed Publication Chair of a Prestigious Conference**

**Dr. Saraju Mohanty** has been appointed as the publication chair of IEEE Computer Society Annual Symposium on VLSI (ISVLSI) to be held at Tampa, Florida, May 13–15, 2009. This is a selective conference with a typical acceptance ratio of 30%.



Dr. Mohanty was session chair at the 10th IEEE International Symposium on Quality Electronic Design (ISQED) at San Jose, CA during March 16–18, 2009.

Mr. Dhruva Ghai and Dr. Saraju Mohanty presented several papers in a highly selective conference (blind review with typical acceptance ratio 25%), 10th IEEE International Symposium on Quality Electronic Design (ISQED) at San Jose, CA during March 16–18, 2009. Two titles of the papers are as follows:

(1) S. P. Mohanty, D. Ghai, E. Kougianos, and B. Joshi, "A Universal Level Converter Towards the Realization of Energy Efficient Implantable Drug Delivery Nano-Electro-Mechanical-Systems", in Proceedings of the 10th IEEE International Symposium on Quality Electronic Design (ISQED), pp. 673–679, 2009.

(2) D. Ghai, S. P. Mohanty, E. Kougianos, and P. Patra, "A PVT Aware Accurate Statistical Logic Library for High-K Metal-Gate Nano-CMOS", in Proceedings of the 10th IEEE International Symposium on Quality Electronic Design (ISQED), pp. 47–54, 2009.

Mr. Dhruva Ghai defended his Ph.D. dissertation in Spring 2009. Mr. Ghai is the first UNT student to obtain Ph.D. in Computer Science and Engineering with VLSI specialization. You can read more about Mr. Ghai below in the Student News section. [↑](#)

## News from the Language and Information Technologies group



Back row (L-R): Ravi Sinha, Hakan Ceylan, Samer Hassan, Ben Leong, Naveen Kovelamudi, Michael Mohler  
Middle row: Carmen Banea, Rada Mihalcea, Tze-I Yang  
Front row: Miguel Ruiz, Kino Coursey, Paul Tarau

Three research events are currently being organized by LIT members:

- Rada Mihalcea is a co-chair for the international conference on Empirical Methods in Natural Language Processing (EMNLP), to be held in Singapore in August. EMNLP is one of the largest and most competitive conferences in the field of computational linguistics.
- Samer Hassan is a co-chair for the workshop on "TextGraphs-4: Graph-based Methods for Natural Language Processing," to be held in Singapore in August.
- Rada Mihalcea is a co-chair for the workshop on "User-contributed Knowledge and Artificial Intelligence: an Evolving Synergy," to be held in Pasadena, California in July.

In addition, several publications by the members of the LIT group have recently been accepted for publication in international venues:

- Kino Coursey and Rada Mihalcea's paper "Using Encyclopedic Knowledge for Automatic Topic Identification," will appear in the Proceedings of the Conference on Natural Language Learning (CONLL 2009), which will take place in Boulder, Colorado.
- A second paper by Kino and Rada "Topic Identification Using Wikipedia Graph Centrality" was also accepted to appear in the Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL 2009), Boulder, Colorado.
- Rada Mihalcea and Ben Leong's paper "Toward Communicating Simple Sentences using Pictorial Representations," has been accepted to appear in the Journal of Machine Translation, published by Springer.
- Chris Loza defended his Master's Thesis on "Cross Language Information Retrieval for Languages with Scarce Resources."

- In joint work with Diana McCarthy (U. Sussex), Ravi Sinha and Rada Mihalcea's paper on "SemEval-2010 Task 2: Cross-Lingual Lexical Substitution," was accepted to appear in Proceedings of the NAACL Workshop on Semantic Evaluations: Recent Achievements and Future Directions (SEW-2009), Boulder, Colorado.
- In joint work with Yaw Gyamfi, Janyce Wiebe, and Cem Akkaya (U. Pittsburgh), Rada Mihalcea's paper on "Integrating Knowledge for Subjectivity Sense Labeling," will appear in Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL 2009), Boulder, Colorado.



## BA in IT Report: CSCE 3055 gone Agile



Students in Dr. Taber's CSCE 3055

Being agile in the IT world is more than Steve Wozniak learning new steps on "Dancing with the Stars". Rather, "being agile" reflects a modern approach to IT project management where tasks are divided into small, rapidly completed and released pieces with constant user feedback and readjustment.

Students in the new CSCE 3055 IT Project Management course are being challenged to learn these techniques. The course is part of the new BA in Information Technology degree program, designed to give students both the technical and managerial sides of IT.

The course is being taught by Dr. John Taber, who on his non-teaching days runs two high tech companies where project management is an everyday challenge. John's background allows real-world experiences to be brought into the classroom to help prepare the students get a jump on their future jobs.

To further the real world experience, several speakers from industry have been brought into the course including Ted Gould, a core team member of

the worldwide Ubuntu Linux; Maurice Leatherbury the CIO of UNT; and Dave Thomas, author of several books on the Ruby language and a world renowned consultant to major corporations on applying agile development to their software projects.

As part of the course, students are planning and developing a complete project management process for modernizing the current faculty evaluation system. Perhaps some of their work will find its way into the University system. Hopefully, in an agile process. ↑

## CSE Students developing iPhone Apps



Back row (L-R): Ryan Garlick, Jon Saine, David Truty, Stephen Eisenhauer, Jason Beck  
Front row (L-R): Trey Tartt, Athip Vatanapradith  
Not pictured: Chris Gathright

Six CSE students are working on various projects in Dr. Garlick's Directed Study on iPhone development. They have spent the semester learning Objective-C and the iPhone Software Development Kit, and are putting the results into developing their own applications.

Student projects include a time scheduling application for independent contractors, a book search utility, and tools to help real estate agents. Three students are working on extensions to a UNT portal application that helps students with campus maps, menus on campus, transportation information, and more.

Programmers everywhere are developing apps for the iPhone and there are more than 25,000 apps in the iPhone app store. Dr. Garlick said his students

may join the app crowd, "We may eventually put some of the applications for sale in the Apple App Store." ↑

## CSEagle Program continues and expands



Some of the CSEagles at an information session.

Back (L-R): Venkata Nagarjun Devarapalli, Aliasgar Amin, Travis Stone, Tommy Janjusic, Daniel Harris

Front (L-R): Olivia Loza, Brittany Bruno, Tamara Schneider, Tikitai James

The CSEagle Ambassador and Mentor program within the Computer Science and Engineering Department has continued to receive grant funding since its inception in 2005. Current funds from the Texas Workforce Commission have ensured that the program will continue until at least August of 2010. The program started with 5 students in the program and has grown to over 20. Each student in the program receives a \$1000 scholarship in return for 1 year of service, including:

- Support the department in attending outreach and recruiting activities including visits to area high schools and community colleges, hosting events at the Discovery Park for prospective students, and conducting technology and program presentations at area schools and special events.
- Work with a small group (2-3) of incoming freshmen students in the Computer Science and Engineering programs to help in acclimating them to the College of Engineering and their profession, as well as the University of North Texas. In addition the mentor may provide a reasonable amount of tutoring assistance for the students in a group.
- Attend a social event once per semester to bring together all the Mentors and the students participating in the mentoring program in order to develop a sense of community in computing.

Applications for the next year will be available in November 2009. The Spring 2009/Fall 2010 CSEagles are Raven Watson, Martin O'Neill II, Aliasgar Amin, Gary Tartt, Daniel Harris, Travis Stone, Jonathan Holman, Brittany Bruno,

Daniel Piers, Russell Yermal, Laura Gonzalez, Tamara Schneider, Olivia Loza, Carmen Banea, Samer Hassan, Iris Gomez-Lopez, Tomislav Janjusic, Brandon Coon, Swetha Nagireddy, Akshara Anugula, Tikitai James, Yamini Yarlagadda, and Venkata Devarapalli. ↑

## CSE competes at CCDC



Back row, (L-R): Paul Sroufe, Prudhvi Surapaneni, Daniel Piers  
Front row, (L-R): Dr. Philip Sweany, Blake Eakin, Angel Fox, Matt Bishop

The **2009 Collegiate Cyber Defense Competition** was held at Texas A&M College Station this year. It is a three day competition whereby teams defend various software and hardware against a RED TEAM attack. This year UNT brought a team of six people, two graduates and four undergraduates to participate. There were eight teams total at Texas A&M this year.

The UNT team was Angel Fox, Paul Sroufe, Prudhvi Surapaneni, Daniel Piers, Dr. Philip Sweany, Blake Eakin and Matt Bishop. This year's competition was made much more interesting by an innovative "Online Store" where the teams can purchase materials and equipment. Teams were then tasked with contracts that they could accept and make "money" to spend at this store. The store included servers, workstations, Cisco firewalls, and cables for everything.

Teams were assigned to identical rooms. Each room had eight computers/servers that were configured to run a variety of services. Some of the computers were already compromised, others were running pirated software, and all of them were out of date, patchwise. Each team then had to begin the arduous task of finding the password to each computer, securing it, and keeping those services online despite an onslaught red team assaults. The competition is recommended for anyone wanting to further their experience in information security.

For more pictures, go to the [CCDC media gallery page](#). ↑

## Advisors' Corner

For this newsletter, your friendly CSE Advisors offer some random thoughts and otherwise informative comments for your consideration ...

Since we have a new Certificate in Game Programming, there have been a few adjustments to the game programming curriculum. The new prerequisite for CSCE 4210 is CSCE 2050, but that is not effective until the



You better listen to CSE Advisors  
Ryan Garlick and David Keathly.

2009–2010 catalog is in force in August. Until then, you will have trouble registering because the old prerequisite of CSCE 3110 is still being enforced. If you have that problem, come to see one of the advisors and we will administratively add you to this course. Also, in the new catalog, the prerequisite for CSCE 4220 is listed as CSCE 4210. There was an error and it should have listed an additional prerequisite of CSCE 4215. CSCE 4215 is a new course in Game Math and Physics and Dr. Parberry STRONGLY recommends that you take 4215 before 4220 (I have seen him wield a sword so I would follow his advice!).

For those of you in the BA in IT Program be sure to enroll in CSCE 1035 in the Fall so you can then take the follow course CSCE 1045 in the Spring. It is required that you take these courses in sequence without a break as they involve a project that continues from one semester to the next in a team environment. They will only be offered in a Fall–Spring rotation.

Register as early as you can for Summer and Fall. The university now requires us to cancel any classes that do not have a minimum of 12 students enrolled by the end of EARLY registration. So if you wait until regular or even late registration, that class you REALLY need or want may have been cancelled. Don't wait for the announcement of who is teaching the class either – we can almost guarantee that the information will not be available until just before the semester starts and well after early and regular registration.

If you are planning to graduate in December, be sure to apply for graduation this summer. Don't wait until the last minute and risk missing the deadline. Be sure your official degree audit is done, you have completed an exit survey and all paperwork is filed with the Registrar.

Consider joining one of our professional societies like the ACM or the IEEE and IEEE Computer Society. Even better, become an officer! You will enjoy many benefits including developing leadership skills,

networking with working professionals and a good experience to list on your resume! Not to mention the excellent technical publications and services available to student member, including some big scholarships! See Ryan Garlick or David Keathly for more details. Also be watching for information about Computer Science and Computer Engineering Honor Societies coming soon.

If you have a favorite professor, consider nominating him or her for one of the university awards for teaching, advising or service. They will appreciate your efforts to recognize them and will be even better as a result! Not to mention it raises awareness campus-wide of the great resources we have here in Computer Science and Engineering! Be proud—Be Green! ↑

### New Faces in the CSE Department

If you have been in the CSE office in F201 lately, you have probably met **Jaymi Dockrey**. Jaymi began working full time for CSE on March 2. Before that, she worked part-time in the Chemistry Department. Jaymi is the front office manager and deals with textbook adoptions and class scheduling for undergraduates. She has been with the University since 2005.



**Daniel Harris** is the new laboratory technician for the engineering quad – a bank of laboratory rooms for upper level undergraduate students. He maintains each laboratory, the network and computing infrastructure required by the labs, and keeps an active inventory database of the equipment and parts that students might need for their projects. In between classes and maintaining the labs, he helps mentor the senior level undergrads. Daniel is also one of UNT's Robocamp camp counselors. This way, he is able to bring concepts of engineering design, programming, and circuits to young students interested in engineering. Mr. Harris graduated from the department with a B.S. in Computer Engineering in December of 2008 and is now in pursuit of his Master's degree.



In his spare time, Daniel enjoys modifying and fabricating computer cases. He has worked collaboratively with other "modders" to fabricate the winning case modification design at Quakecon 2008. He is currently working on creating a custom pinball machine designed around an embedded ARM processor and a 2-wire serial communication network. If you ever want to chat about life, engineering, or microcontrollers,

drop by the Senior Design Lab or Embedded Systems Lab – he seems to haunt that area and is happy for the conversation.

Welcome to both Jaymi and Daniel! ↑

## Student News

CSE faculty members selected the following outstanding students who were recognized at Honors Day on April 3, 2009.

### Outstanding Undergraduate Student in Computer Science - Pete Curry

**Pete Curry** is a senior in Computer Science. His primary interests are compilers and programming languages, especially for multi-core architectures. He is also interested in other parallel architectures.



His current project is developing a new functional language, compiler, and virtual machine which is intended to efficiently and transparently utilize modern multi-core systems. He has also worked for the Computer Systems Research Lab at UNT where he contributed to the compiler and other tools for the Scheduled Dataflow (SDF) architecture. In Summer 2008, Pete worked at Texas Instruments as a Student Program Employee optimizing compilers. He has been invited back and will return to TI in Stafford, Texas in Summer 2009.

Pete would like to thank Dr. Phil Sweany for his support. Dr. Sweany has provided Pete with many opportunities, equipment, facilities, and valuable advice. Pete is also very grateful to his parents and sister for their support. When not working, Pete also enjoys cooking. ↑

### Outstanding Undergraduate Student in Computer Engineering - Elena Lassandro

**Elena Lassandro** is originally from Italy. She was born and raised in Rome but she moved to Texas to follow her dream of studying abroad. Elena is a senior at the University of North Texas and she will be receiving her B.S. in Computer Engineering with a minor in Mathematics. She is specializing in computer networks and her main interest is information security. In addition, she works in the Information Technology (IT) department of Baylor Health Care System and enjoys working in the health care field. Her experience working for Baylor Health Care System opened her eyes on how important and necessary technical support is to the health care providers in our hospitals. Elena hopes that after her graduation she can continue working for Baylor and start a career in health care that will allow her to use her technical skills to improve and increase the efficiency of medical care.



At the moment, Elena's life keeps her very busy. Working full time and being a senior in engineering does not leave much time for her interests, which vary from mathematics to philosophy. Elena also enjoys traveling and learning about other cultures. Even though her journey in the United States has not been easy, Elena has worked very hard to stay focused and to complete her course of study. Elena is currently working on her senior design project called Blind Spot Camera System (BSCS). The Blind Spot Camera System (BSCS) is a system that will use cameras to visually cover vehicular blind spots allowing the driver to safely turn at sharp intersections or change lanes. ↑

**Outstanding Graduate Student in Computer Science - Paul Sroufe**

**Paul Sroufe** will be receiving his M.S. in Computer Science in December 2009. He specializes in computer networks where his passion is information security. Paul has been working with Dr. Ram Dantu for over a year on various research projects and papers. He has recently published a paper on his work involving behavioral feature extraction of emails. Another long paper is in submission currently. The work includes spam and ham classification, identifying spam botnets, and personal fingerprint analysis of emails. This work will hopefully be a good foundation for his thesis.



Dr. Dantu has been hugely influential and has helped Paul a great deal over the past year. For that, Paul would like to say, "Thanks Dr. Dantu!" Paul recently participated in the 2009 Collegiate Cyber Defense Competition. "This year's competition was brutally tough but all the same enjoyable and a great learning experience." said Paul. He recommends it to anyone that enjoys IT security.

In his free time, Paul enjoys the outdoors including paintball and camping/hiking, games, working out at the gym, and spending time with his friends. ↑

### **Outstanding Graduate Student in Computer Engineering - Sahasan Naraharisetti**

Sahasan Naraharisetti comes from a small town, Eluru in Southern India. He graduated with his Bachelor of Technology (B.Tech) in Electronics and Communication Engineering in 2006, and then moved to UNT to pursue his Master's degree. During his stay at UNT, he was given the opportunity to work on a digital watermarking project with Dr. Saraju P Mohanty in the VLSI design and CAD Laboratory (VDCL). For that, he wants to say "Thanks Dr. Mohanty!"



In October 2008, Sahasan successfully defended his dissertation titled "Region Aware DCT Domain Invisible Robust Blind Watermarking for Color Images." In his free time, he loves to hang out with his buddies, dance, and play soccer. ↑

### **Outstanding PhD Student in Computer Science and Engineering - Santi Phithakkitnukoon**

**Santi Phithakkitnukoon** is originally from Chiang Mai, Thailand. He received both of his B.S. and M.S. in Electrical Engineering with specialization in Digital Signal Processing and Communications from Southern Methodist University, Dallas, Texas. He is currently working with Dr. Ram Dantu as a research assistant. His interest has been about applying machine learning techniques to real world problems to design and develop algorithms that allow computing devices to assist people for a better quality of life. His current research studies include context-aware mobile computing, mobile/online social analysis, and email shaping. Santi has published his works and served as program committee member and reviewer for several international journals and conferences such as IEEE, ACM, and AAAI. He has been collaborating with researchers from MIT Media Lab, British Telecom, and UT-Dallas.



Santi has won the Who's Who Among Students in American Colleges and Universities Award in March 2009, the University Scholarship Committee Scholarship in 2008, the Robert B. Toulouse Dissertation Award in 2008, the Outstanding Doctoral Student Award from the Federation of North Texas Area Universities in 2007, and UNT Doctoral Academic Achievement Scholarship in 2007. Santi is a member of Phi Kappa Phi (National Honor Society), Eta Kappa Nu Association (National Electrical and Computer Engineering Honor Society), Tau Beta Pi (Electrical Engineering Student Honor Society), Golden Key International Honor Society, and a student member of IEEE, ACM, and AAAI. He has completed his dissertation proposal in June 2008 and is preparing to defend his dissertation in September 2009. ↑

### **Outstanding Students recognize Faculty Members at Honors Day**

These outstanding students were asked to name faculty members who were a source of inspiration and support during their education at UNT. These CSE faculty members were recognized at Honors Day: **Dr. Ram Dantu, Dr. Saraju P. Mohanty, Dr. Robert Akl and Dr. Phil Sweany.** Congratulations to these faculty members on receiving this honor. ↑

### **Dhruva Ghai defends his Ph.D. Dissertation**



(L-R) Dr. Armin Mikler, Dr. Murali Varanasi, Dr. Saraju Mohanty, Mr. Dhruva Ghai, Dr. Elias Kougianos

**Dhruva Ghai** defended his dissertation, "Variability Aware Low Power Techniques for Nanoscale Mixed Signal Circuits," on February 20, 2009. His major professor was Dr. Saraju Mohanty. Also serving on his dissertation committee were Dr. Armin Mikler from the CSE Department, Dr. Murali Varanasi, Chair of the Electrical Engineering Department, and Dr. Elias Kougianos from the Engineering Technology Department.

In his dissertation, Mr. Ghai proposed methodologies and techniques to achieve variability, power, performance and parasitic aware circuit designs. He proposed three approaches: the single iteration automatic approach, the hybrid Monte Carlo and Design of Experiments (DOE) based approach, and the corner based approach. Widely used mixed signal circuits such as Analog to Digital Converter (ADC), Voltage Controlled Oscillator (VCO), Voltage Level Converter and Active Pixel Sensor (APS) have been designed at nanoscale CMOS and subjected to the proposed methodologies. The effectiveness of the proposed methodologies has been demonstrated through exhaustive simulations. Apart from these methodologies, he also explored the application of dual-oxide and dual-threshold techniques at circuit level in order to achieve power (including leakage) minimization.

In addition to his defense, Mr. Ghai presented a department colloquium on March 13, 2009 on "Methodologies for Design of Power-Performance-Parasitic-Process-Aware Nano-CMOS Integrated Circuits."

Dhruva Ghai obtained his B.E. degree in Electrical Engineering from University of Pune, India in 2003. He received the Master of Technology degree in VLSI Design and Microelectronics from Rajiv Gandhi Technical University, India in 2006. He will receive his Ph.D. in Computer Science and Engineering from UNT in May 2009. His research interests include design, layout and variability aware optimization of nanoscale CMOS circuits. He is the author of 11 peer-reviewed journal and conference publications in the area of VLSI Design. ↑

### **CSE Students win International Education Awards**

On April 6, at the Annual International Education Awards Banquet, several CSE students received awards. **Sampath Pamidimukkala**, a graduate student in Computer Engineering from India, was recognized as one of two UNT students to win the Outstanding International Student Award. He is a student of Dr. Saraju Mohanty. Sampath has been the President of the India Students Association at UNT and Youth Chair of the Board of Directors of the Denton County Indian Cultural Association. The award was presented by Jean Schaaque, Associate Dean, College of Arts and Sciences; Earl Gibbons, Vice Provost and Associate Vice President for International Education; and Sandra Terrell, Dean of the Robert B. Toulouse School of Graduate Studies, and Vice Provost for Academic Outreach.



Three CSE students received International Education Committee Scholarship Awards. **Carmen Banea**, a graduate student in Computer Science from Romania; **Samer Hassan**, a graduate student in Computer Science from Egypt; and **Sampath Pamidimukkala** received these scholarship awards. Carmen and Samer are doctoral students majoring in Natural Language Processing under the tutelage of Dr. Rada Mihalcea, and they are also recipients of the Outstanding International Student Awards in 2004 and 2005, respectively.



The Outstanding International Student Awards and the International Education Committee Awards are conferred based on academic excellence and involvement in promoting international activities on campus. Carmen is president of World Echoes, while Samer is a Board of Directors Member and Webmaster of the organization. World Echoes is the largest multicultural organization on campus bringing together more than 300 students from 40 countries, and has received numerous awards throughout the years.

Congratulations to all three on receiving these awards! ↑

## Graduating Graduate Students invited to Exit Meeting on April 30

Dr. Armin Mikler, Graduate Studies Coordinator, invites all graduate students who are graduating this semester to come to an Exit Meeting

on Thursday, April 30 at 11:30 a.m. in the CSE department's main conference room, NTRP F223. To ensure the quality of our program and to determine how it should be changed and improved, we seek information from a number of sources including our recent graduates, our advisory board, area employers, and most importantly, from you, our current students. You have a unique perspective that is crucial to this effort. Dr. Mikler looks forward to meeting with our graduate students who will be leaving us this semester and getting their feedback about their experience in our CSE department. ↑

### **BA and BS Graduates invited for Exit Interview**

If you are graduating with a BA or BS in May, you should have received a letter inviting you to take an online exit survey and then meet with an advisor to have an exit interview. Please call the department at 940-565-2767 and make an appointment to meet with an advisor to complete an interview and let us know how you feel about the courses in our curriculum and any suggestions you may have about future courses. You should complete your appointment no later than Friday, May 1, to be in time for graduation. ↑

## **CSE Summer and Fall 2009 Courses**

### **CSCE 3410.021: PHP Programming**

Creating dynamic webpages and web scripting is a hot topic in the industry today, and it is a skill in great demand. One of the most-commonly used programming languages for this task is PHP. The web-oriented PHP Programming Language will be offered this summer session as CSE 3410.021. This course is taught during the 10-week summer schedule.



The course will discuss the process of developing web-based applications using this language, showing students what it takes to process forms-based data, as well as a variety of programming techniques for the manipulation and storage of both client-oriented data and webpage content. As time permits, more advanced discussions involving AJAX will be included.

This summer course will be taught by Don Retzlaff. It has been shown that knowledge of PHP dramatically helps students prepare for the software development courses CSCE 4410 and 4420. Be sure and take advantage of this powerful development language and get a head start on the preparation for 4410. ↑

### **CSCE 3850: Introduction to Computational Life Science**

This course will be offered in Fall 2009 and provide a survey treatment of the applications of computational paradigms in the natural and

physical sciences. The course will be designed to have a broad appeal to the natural and physical science students as well as the computer science students. Team projects and research will be integrated into the course in such a fashion as to encourage interdisciplinary collaboration among the students from different departments and background. The survey course on application of computer and computational science paradigms in the natural sciences will introduce students to problems and topics including:

- Agent based simulation of societies and population
- Mathematical modeling
- Computational Chemistry and Biology
- Models in Environmental Science
- Computational Epidemiology
- Geographic Information Systems
- Remote Sensing and Image Analysis
- Supercomputing
- Grid and Cluster Computing
- Modeling and Simulation
- Data Visualization

Guest lectures by scientists and professionals in the corresponding fields will enhance the understanding of specific computational requirements and applications. Students will have the opportunity to explore different computational paradigms that are deemed suitable for addressing and solving a problem from a specific domain. This course is cross-listed in Biology and Geography as well. David Keathly and Armin Mikler will be the instructors for the course. ↑

### Reading Group Formation

If you are interested in reading and learning about Secure Architectures, Trusted Platforms and other security and protection mechanisms implemented in hardware, please join Dr. Krishna Kavi in this Reading Group. You can also sign up for a Directed Study to receive credit. However, you will have to produce reports and complete other assigned work that will be graded.

The group will read research papers spanning over the past several years to understand the designs and their limitations. One possible outcome is a survey paper that describes various hardware solutions and compares them.

The group will meet once a week for 2–3 hours in Summer 2009 semester, around the beginning of June. If you are interested, please contact Dr. Kavi at [kavi@cse.unt.edu](mailto:kavi@cse.unt.edu). ↑

## College of Engineering News

## First Engineering Systems Program in Texas

The University of North Texas offers the first Engineering–Systems program in Texas. This M.S. degree program in the Department of Engineering Technology at the College of Engineering is an emerging Engineering field. The Engineering Systems program has been launched due to a significant demand by our constituencies and the emerging worldwide need of this discipline.



“The Engineering Systems program is a graduate multidisciplinary education and research program with concentrations in Mechanical Systems, Electrical Systems, Construction Management and Engineering Management. The program demands academic rigor and depth, yet addresses the real–world problems of advanced engineering and technology,” says **Nourredine Boubekri**, Chair of the Department of Engineering Technology and Interim Chair of Mechanical and Energy Engineering Department. ↑

## New Assistant to the CENG Dean

**Lisa Billingsley** is the new Senior Assistant to Dean Costas Tsatsoulis in the CENG. She is a 1994 graduate of Union University in Jackson, Tennessee (her hometown) with a bachelor’s degree in history. She and her husband moved here from Nashville last summer when he was transferred to the Denton Peterbilt Division Headquarters. Previously she worked as a Civil War interpreter/historian at the Historic Carnton Plantation in Franklin, TN.



Lisa has been married to Craig Billingsley for 15 years. They don’t have any children, but they recently adopted two dogs – Molly (Australian Shepherd mix) and Abby (Retriever/Beagle mix). Her hobbies are studying history (especially the Civil War), reading, writing, and playing with computers and her dogs. Lisa and Craig live in the South Denton/Corinth area. ↑

The CSE Student Email Newsletter was assembled and produced by Genevieve Murphy and Don Retzlaff. It is a publication of the UNT Computer Science and Engineering Department. Contact the department at [csenewsletter@unt.edu](mailto:csenewsletter@unt.edu).

<http://www.cse.unt.edu> UNT Computer Science and Engineering Department – April 2009