

pointers

GEORGIA STATE UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE

FALL 2011

BIBM 2011 Coming to Atlanta

On November 12–15, Georgia State University will host the 2011 IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2011). The conference will be held in the Atlanta Marriott Marquis hotel at 265 Peachtree Center Avenue, a half-mile north of the GSU campus.

BIBM 2011 is a multidisciplinary conference that brings together academic and industrial scientists from computer science, biology, chemistry, medicine, mathematics, and statistics. This year's BIBM will be the fifth. The conference was previously held in San Jose (2007), Philadelphia (2008), Washington, D.C. (2009), and Hong Kong (2010).

Selected papers from BIBM 2011 will be published in special issues of top journals, including *BMC Bioinformatics*, *BMC Genomics*, *IEEE Transactions on NanoBioscience*, *International Journal of Data Mining and Bioinformatics*, *Network Modeling and Analysis in Health Informatics and Bioinformatics*, *Proteome Science*, and *Proteomics*.

Several GSU faculty members are helping to organize BIBM 2011. Dr. Yi Pan is serving as a conference co-chair, along with Dr. Stephen Wong of The Methodist Hospital Research Institute in Houston. Dr. Yanqing Zhang is one of three publicity co-chairs for the conference. Dr. Raj Sunderraman is the

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Ph.D. Program Ranks High at PhDs.org

Georgia State University's computer science Ph.D. program ranks high in several categories at the PhDs.org website. This site generates customized rankings for 127 U.S. Ph.D. programs based on priorities chosen by the visitor. The following table shows the national ranking of GSU's Ph.D. program using six categories suggested by PhDs.org.

Category	Rank
Larger programs	45
Smaller programs	23
Programs with more funded students	37
Programs with lower tuition	26
Programs with more female students and faculty	14
Programs with more minority students and faculty	13

In four of these categories, GSU's Ph.D. program is the highest-ranked in the state of Georgia.

Much of the data used to create the rankings comes from an assessment of doctoral programs published by the National Research Council in 2010. Other sources include the Integrated Postsecondary Education Data System (an annual set of surveys of all U.S. colleges and universities), the Survey of Earned Doctorates (an annual survey of all new recipients of doctorates from U.S. universities at graduation), and the Survey of Graduate Students and Postdoctorates in Science and Engineering (an annual assessment of graduate students and postdoctoral researchers in science, engineering, and health-related fields).

PhDs.org provides graduate school rankings, Ph.D. job listings, and career resources. The site was originally created by faculty and students at Dartmouth College with support from the Alfred P. Sloan Foundation.

Chair's Message

I am pleased to announce that our department will host the 2011 IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2011) on November 12–15. The conference will be held in the Atlanta Marriott Marquis hotel, which is just a short walk from campus. We have hosted other conferences before, including ISBRA in 2007 and 2008, but BIBM is the largest and most prestigious bioinformatics conference to come to GSU, with over 400 researchers expected to attend. The conference will feature outstanding keynote speakers and the best papers will be published in top bioinformatics journals.

I am also happy to announce that our department will receive funding from GSU's Second Century Initiative to hire two faculty members in 2012. Last year, we were awarded funding to hire an eminent scholar in bioinformatics. We are currently interviewing candidates for this position. These new positions will further enhance the strength of our faculty.

Last year's National Research Council rankings of Ph.D. programs showed that our program is not only competitive with others around the country but also among the best in the Southeast. In this issue of *Pointers*, we have a follow-up story with the latest rankings from the PhDs.org website, which is often used by students applying to graduate school. In four of the six categories suggested by PhDs.org, our program is the highest-ranked in Georgia. We are very pleased with the recognition our Ph.D. program has received.

Two of our Ph.D. students achieved distinction this spring. Ken Nguyen became the first student in department history to win the William M. Suttles Graduate Fellowship. Only one of these prestigious fellowships is awarded each year in a campus-wide competition, so winning it is a great honor for Ken and our department. Saurav Karmakar also won a campus-wide award when he was named the 2011 Royal Flame Student Leader of the Year. Both students also won GSU Dissertation Grants. We are proud of Ken and Saurav and the other outstanding students in our Ph.D. program.



Dr. Yi Pan



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COLLEGE OF ARTS AND SCIENCES

William J. Long, *Dean*

Charles Derby, *Associate Dean for
Natural and Computational Sciences*

We Need Your Help

These are exciting times in the Department of Computer Science. Our program is rapidly expanding. We are hiring nationally-recognized scholars who conduct state-of-the-art research, and we are attracting the best students from around the world. Your generous donation will help us continue to improve in the years ahead. For information about giving to the department, please visit www.cs.gsu.edu/?q=alumni. Your gifts are tax-deductible to the fullest extent allowed by law. To ensure that your donation reaches us, please designate that it go to "Computer Science."

BIBM 2011 COMING TO ATLANTA

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proceedings chair. Dr. Anu Bourgeois and Dr. Min Li, a visiting scholar, are the local arrangements co-chairs. Dr. Alex Zelikovsky is one of three tutorial co-chairs. Tammie Dudley, a GSU staff member, is the registration chair.

The program committee for BIBM 2011 includes several Ph.D. graduates from our department: Dr. Gulsah Altun (Scripps Research Institute), Dr. Bernard Chen (University of Central Arkansas), Dr. Hae-Jin Hu (Catholic University of Korea), Dr. Hui Liu (Missouri State University), and Dr. Wei Zhong (University of South Carolina Upstate).

BIBM 2011 is sponsored by our department and by the National Science Foundation, the Institute of Electrical and Electronics Engineers (IEEE), the IEEE Computer Society, the IEEE Computer Society Technical Committee on Computational Life Sciences, and the IEEE Computer Society Technical Committee on Intelligent Informatics.

Bourgeois Is Co-PI for STEM Grant

Dr. Anu Bourgeois is a co-PI for a \$1.2 million Department of Education grant awarded to Georgia State to provide student support services for science, technology, engineering, and mathematics (STEM) education. The grant, which runs for five years, is administered by GSU's Office of Educational Opportunity and TRIO Programs (OEO Trio).



Dr. Anu Bourgeois

Funds from the grant are being used to assist STEM students who are first-generation college students, come from a low-income background, or have disabilities. Up to 120 students can be supported at a time. Services provided to these students include individual and group tutoring, academic advisement, community service learning projects, financial aid, workshops, career exploration and development assistance, field trips, and a computer lab with free printing and scanning. Dr. Bourgeois has personally conducted workshops in addition to leading a field trip to the Visualization Wall in the Petit Science Center.

Dr. Deborah Rhodes of OEO Trio is the project director for the grant, with Dr. Bourgeois and Dr. Dabney Dixon of the Department of Chemistry serving as co-PIs. Other participating faculty members include Dr. Margo Alexander (Mathematics & Statistics), Dr. Michael Black (Neuroscience Institute), Dr. Gigi Ray (Chemistry), and Dr. Sutandra Sarkar (Mathematics & Statistics).

Zelikovsky Wins NIFA Grant



Dr. Alex Zelikovsky

Dr. Alex Zelikovsky is one of four investigators on a recently awarded grant from the National Institute of Food and Agriculture, an agency of the U.S. Department of Agriculture. The two-year grant is valued at \$419,388.

The other researchers are faculty members at the University of Connecticut: Dr. Ion Mandoiu (Department of Computer Science and Engineering), Dr. Mazhar Khan (Department of Pathobiology and Veterinary Science), and Dr. Rachel O'Neill (Department of Molecular and Cell Biology).

Work to be done under the grant includes developing bioinformatics tools for using next-generation sequencing data to study viral quasispecies evolution in animal populations. (Viral quasispecies are variants that can quickly evolve in animal hosts, reducing the effectiveness of vaccination against viral infections.) These tools will then be used to make live infectious bronchitis vaccines more effective. The project is expected to lead to better monitoring of viral outbreaks in animal populations, lower vaccination costs, improved animal health, and higher yield.

Department to Hire Two Faculty Members with 2CI Funding

The Department of Computer Science will receive funding from Georgia State's Second Century Initiative (2CI) to hire two faculty members in 2012.

The goal of 2CI, which is currently in its second year, is to strengthen collaborative research by hiring at least 100 faculty members over a five-year period. Last fall, GSU departments were asked to submit proposals for

"cluster hires," in which two or more people are hired to help boost a research area to nationally recognized significance. Computer Science contributed to two of the eight proposals that were chosen for funding.

One of the funded research clusters, Stellar Astrophysics and Astroinformatics, is a collaboration between Computer Science and GSU's astronomy program, part of the Department of Physics and Astronomy. This cluster will focus on creating high-resolution images of stars, mining large-scale databases, and developing models of stars and their distribution in space. 2CI funding will make it possible to hire three faculty members, with specialties in interferometric imaging, database construction and mining, and theoretical stellar astrophysics. The database expert will become a Computer Science faculty member.



The other funded cluster, Transcultural Conflict and Violence, involves four departments (Communication, Computer Science, Religious Studies, and English) in cooperation with the Middle East Institute. Three faculty members will be hired, with Computer Science gaining one of these positions. Research performed by this cluster includes examining online terrorist content, so the Computer Science hire will be a specialist in signal and imaging processing as well as network and Web security, with experience in artificial intelligence, database management and mining, and natural language processing.

In the first round of 2CI, which took place in 2010, Computer Science was awarded funding to hire an eminent scholar in the area of bioinformatics. Interviews for the position are underway, with the successful candidate expected to join GSU in 2012.

Computer Science Graduates in Demand

On May 19, the National Association of Colleges and Employers (NACE) released the results of a survey showing that Class of 2011 computer science graduates are receiving a higher percentage of job offers than students with other majors.

The 2011 *Student Survey* shows that 56.2% of computer science graduates with a bachelor's degree who have applied for a job have received an offer. Accounting graduates are in second place with 53.8%, followed by economics (50.9%) and engineering (50%). This year's job offer rate for computer science graduates increased 13.8 percentage points from the rate in 2010. This is the first time that computer science has had the highest job offer rate in a NACE *Student Survey*; traditionally, accounting graduates rank first in percentage of offers.

Computer science is second only to chemical engineering when it comes to starting salaries, according to the Spring 2011 *Salary Survey*, also published by NACE. The average starting salary for computer science graduates with a bachelor's degree is \$63,017, up 4.3% from last year's average of \$60,426. Chemical engineering graduates have an average starting salary of \$66,886.

Song Receives Industrial Research Funding

Dr. WenZhan Song, who joined GSU in 2010, has received a 4-year grant for \$144,144 from the Korea Food Research Institute (KFRI) and a research gift of \$3,600 from Avyzo Systems, Inc.



Dr. WenZhan Song

The KFRI project, which is titled “Development of USN Sensor Node to Control Food Quality,” will be done jointly with Dr. Deuk Heo of Washington State University. The two researchers will develop an integrated RFID wireless sensor node (RWSN) to control quality in the food logistics industry. Monitoring one or two environmental factors is no longer sufficient to meet the demand for quality control. The proposed system can monitor multiple environmental factors, including temperature, humidity, and shock, thus guaranteeing a high level of quality control. In addition, RFID and ZigBee wireless interfaces will be incorporated to increase the coverage of the wireless sensor network and to enhance the interoperability of wireless communication methods operating with both RFID and ZigBee. The goal of the research is to design an integrated RWSN to monitor and control food quality and to develop middleware for the proposed sensor nodes.

Dr. Song is helping Avyzo develop a water-meter sensor network prototype. Today, many small water leaks in multifamily and commercial buildings go undetected for years, wasting a significant amount of water. Water leaks are often discovered only when visible leakage is noticed. The solution is submetering, in which individual low-cost meters are installed in apartments and linked through a wireless system. A water submetering sensor network will support real-time fine-scale water-consumption monitoring from anywhere at any time, allowing leaks to be detected immediately.

Pan Wins BaCaTeC Grant

Dr. Yi Pan has won a grant from the Bavaria California Technology Center (BaCaTeC) for joint research with a faculty member in Germany. His collaborator, Dr. Thomas Rauber, is based at the University of Bayreuth. Their joint project, titled “Parallel Scientific Computing on Public Computing Platforms,” started last year.

One of the project’s goals is to study scheduling issues that arise in public computing, where individuals allow their personal computers to be used to solve portions of a larger problem. Perhaps the best-known example of public computing is the SETI@home project, which allows people to install software that helps analyze radio telescope data in an effort to determine if there is intelligent life outside Earth. Dr. Pan and Dr. Rauber are examining ways to transform a traditional scientific computing application into one that can run on a public computing platform.

The BaCaTeC grant provides 3,000 euros to the researchers, who are using the funds primarily for travel expenses. Money from the grant allowed Dr. Pan to visit Germany earlier this year, where he gave a talk titled “From Supercomputing to Grid Computing to Cloud Computing” on March 1.

BaCaTeC was founded in 2000. Its mission was originally to promote cooperation between technology researchers in Bavaria (a state in southeastern Germany) and their counterparts in California. BaCaTeC has recently begun to support joint projects with researchers in Georgia, Florida, and South Carolina as well.

Faculty Present Four Papers at IEEE INFOCOM 2011

Faculty members from the Department of Computer Science, along with two Ph.D. students and a visiting scholar, presented four papers at the 30th IEEE International Conference on Computer Communications (IEEE INFOCOM 2011). The conference was held in Shanghai, China, on April 10–15.

Dr. Yingshu Li co-authored three papers, and Dr. Raheem Beyah, Dr. Xiaojun Cao, and Dr. Yi Pan each co-authored one paper. Dr. Longjiang Guo, a visiting scholar, also co-authored a paper, as did Ph.D. students Shouling Ji and Yang Wang. The papers were:

- “Capacity of Dual-Radio Multi-Channel Wireless Sensor Networks for Continuous Data Collection,” Shouling Ji, Yingshu Li, and Xiaohua Jia (City University of Hong Kong)
- “SMITE: A Stochastic Compressive Data Collection Protocol for Mobile Wireless Sensor Networks,” Longjiang Guo, Raheem Beyah, and Yingshu Li
- “A Study of the Routing and Spectrum Allocation in Spectrum-sliced Elastic Optical Path Networks,” Yang Wang, Xiaojun Cao, and Yi Pan
- “Sparse Target Counting and Localization in Sensor Networks Based on Compressive Sensing,” Bowu Zhang, Xiuzhen Cheng, Nan Zhang (all of George Washington University), Yong Cui (Tsinghua University), Yingshu Li, and Qilian Liang (University of Texas at Arlington)

Dr. Beyah and Dr. Cao also served as session chairs at the conference.

IEEE INFOCOM 2011 was sponsored by the IEEE Communications Society, Shanghai Jiao Tong University, and the National Natural Science Foundation of China.

Faculty and Staff Honored for Years of Service

Seven computer science faculty and staff members were honored at the 2011 GSU Service Recognition Ceremony held on April 26. Five faculty members reached a service milestone during the 2010 fiscal year:

- Dr. Raheem Beyah – 5 years
- Dr. Anu Bourgeois – 10 years
- Dr. Robert Harrison – 10 years
- Dr. Yi Pan – 10 years
- Dr. Sushil Prasad – 20 years

Two staff members also reached a milestone during this period:

- Celena Pittman – 10 years
- Shaochieh Ou – 15 years

Pan Cloud Computing Work Featured on GSU Site

Dr. Yi Pan’s cloud computing research was recently featured on Georgia State’s main website. In a story titled “Computing in the Cloud,” GSU science writer Jeremy Craig explains the concept of cloud computing and describes Dr. Pan’s efforts to make it more efficient and less error-prone. The story also discusses Dr. Pan’s work with IBM researcher Andy Rindos and mentions the IBM Faculty Award that Dr. Pan won last year.

Recent Ph.D. Graduates

Irina Astrovskaya. *Dissertation:* Inferring Genomic Sequences. *Advisor:* Dr. Alex Zelikovsky. *Current position:* Postdoctoral research associate, Center for Bioinformatics and Computational Biology, University of Maryland Institute for Advanced Computer Studies. (May 2011)

Zejin Ding. *Dissertation:* Diversified Ensemble Classifiers for Highly Imbalanced Data Learning and Their Application in Bioinformatics. *Advisor:* Dr. Yanqing Zhang. *Current position:* Software engineer, Barracuda Labs (part of Barracuda Networks). (May 2011)

Hailong Hou. *Dissertation:* Computing with Granular Word. *Advisor:* Dr. Yanqing Zhang. *Current position:* Director of development department, Online Data Services, LLC. (May 2011)

Owen Joins Editorial Board of IEEE CG&A



Dr. G. Scott Owen

Professor Emeritus G. Scott Owen has been named to the editorial board of *IEEE Computer Graphics and Applications*. Along with Dr. Gitta Domik of the University of Paderborn, he will edit the journal's new Education department, which was introduced in the January/February 2011 issue. This department will provide a forum for educators to present innovative instructional methods and new types of courses.

IEEE CG&A is a leading journal for practitioners in the field of computer graphics. It is published six times a year by the IEEE Computer Society. Dr. Owen served two three-year terms as president of ACM SIGGRAPH (Special Interest Group on Computer Graphics).

ISBRA 2011 Held in China

In May, the Department of Computer Science helped organize the 7th International Symposium on Bioinformatics Research and Applications (ISBRA 2011), which drew researchers, developers, and practitioners working on all aspects of bioinformatics and computational biology and their applications. Georgia State hosted ISBRA in 2007 and 2008. This year, the symposium was held in Changsha, China, with Central South University's School of Information Science and Engineering serving as the host.

ISBRA 2011 drew over 80 attendees from Brazil, Canada, China (including Hong Kong), Japan, Poland, South Korea, Switzerland, the United States, and Taiwan. The symposium featured 36 papers (selected by the program committee from 92 submissions) and 26 posters. Five distinguished scientists gave keynote talks:

- Dr. Bernard Moret (Swiss Federal Institute of Technology, Lausanne), "Phylogenetic Analysis of Whole Genomes"
- Dr. David Sankoff (University of Ottawa), "OMG! Orthologs for Multiple Genomes – Competing Formulations"
- Dr. Russell Schwartz (Carnegie Mellon), "Phylogenetics of Heterogeneous Samples"
- Dr. Alex Zelikovsky (Georgia State), "Computational Advances in Next Generation Sequencing"
- Dr. Seyoung Kim (Carnegie Mellon), "Genome-Phenome Association Analysis of Complex Diseases – A Structured Sparse Regression Approach"



One of the sessions at ISBRA 2011, which was held at Central South University in Changsha, China

The proceedings of ISBRA 2011 were published as volume 6674 of the Springer Lecture Notes in Bioinformatics series. Special issues of *IEEE/ACM Transactions on Computational Biology and Bioinformatics* and *BMC Bioinformatics* will be devoted to expanded versions of the best symposium papers.

The steering chairs of ISBRA 2011 were Dr. Dan Gusfield (University of California, Davis), Dr. Yi Pan (Georgia State), and Dr. Marie-France Sagot (INRIA). The general chairs were Dr. Mona Singh (Princeton), Dr. Lijian Tao (Central South University), and Dr. Albert Zomaya (University of Sydney). The

program chairs were Dr. Jianer Chen (Texas A&M), Dr. Jianxin Wang (Central South University), and Dr. Alex Zelikovsky (Georgia State). The publicity chairs were Dr. Ion Mandoiu (University of Connecticut) and Dr. Yanqing Zhang (Georgia State). Dr. Raj Sunderraman (Georgia State) was the publication chair.

Financial support for ISBRA 2011 was provided by Central South University, GSU, the National Science Foundation, and the National Natural Science Foundation of China.

Next year's ISBRA will be held in Dallas on May 21–23, 2012.

Recent Departmental Colloquia

January 28. "Integrating Quantitative/Computational Sciences for Biomedical Research: Bioinformatics and Systems Biology," *Dr. Hulin Wu*, University of Rochester School of Medicine and Dentistry

February 11. "Synchronization and Phase Locking in Networks of Pulse Coupled Nonlinear Neural Oscillators," *Dr. Carmen C. Canavier*, LSU Health Sciences Center

February 18. "Data Mining in Bioinformatics: Techniques, Methods and Challenges," *Dr. Xiaohua (Tony) Hu*, Drexel University

February 25. "Translational Bioinformatics and Quantitative Biology in Cancer Research: From Understanding Genetic and Molecular Signatures of Human Disease to Personalized and Pathway-Centric Medicine," *Dr. Gennady Verkhivker*, University of Kansas

March 17. "Cognitive and Secure Tele-Healthcare Networking and Signal Processing," *Dr. Fei Hu*, University of Alabama

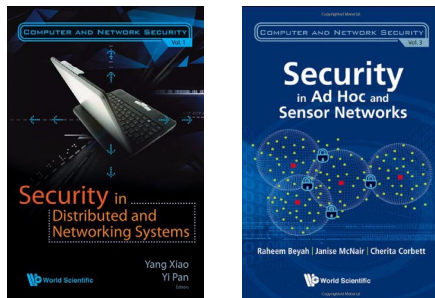
March 25. "A Systems Biology Approach to Pathway Analysis," *Dr. Sorin Draghici*, Wayne State University

April 14. "Splash: A Computational Platform for Collaborating to Solve Complex Health Problems," *Dr. Paul P. Maglio* and *Dr. Cheryl A. Kieliszewski*, IBM Research - Almaden

Faculty Books Are Bestsellers

Books edited by Dr. Raheem Beyah and Dr. Yi Pan are listed as bestselling titles in a recent catalog of digital security books issued by World Scientific Publishing Company.

One of the books, *Security in Distributed and Networking Systems*, was co-edited by Dr. Pan and Dr. Yang Xiao of the University of Alabama. It was published in 2007. The other book, *Security in Ad Hoc and Sensor Networks*, was published in 2009. It was co-edited by Dr. Beyah along with Dr. Janise McNair of the University of Florida and Dr. Cherita Corbett of Sandia National Laboratories.



Both books belong to World Scientific's Computer and Network Security series, which is co-edited by Dr. Pan. *Security in Distributed and Networking Systems* is volume 1 in the series and *Security in Ad Hoc and Sensor Networks* is volume 3.

Nguyen Wins Award at MBD Research Day

Ph.D. student Ken Nguyen won the first place award for oral presentation at the Molecular Basis of Disease 2011 Research Day, which was held on June 17 in the Student Center Ballroom. Judges selected his talk, "BLAST' Toward the Future," as the best of the six oral presentations made by MBD Fellows. Mr. Nguyen received a prize of \$250 for his winning talk. Wooyoung Kim, another Ph.D. student from the Department of Computer Science, was one of the other speakers; her topic was "Biological Network Motif Detection and Evaluation." Dr. Yi Pan is the Ph.D. advisor for both students.

In addition to oral presentations, MBD Research Day featured a poster session and a keynote address by Dr. Ralph Baric of the University of North Carolina School of Medicine. Six of the 41 posters were prepared by MBD Fellows from Computer Science.

Molecular Basis of Disease is an interdisciplinary research program that involves faculty in six departments: Biology, Chemistry, Computer Science, Physics and Astronomy, Mathematics and Statistics, and Computer Information Systems. The program provides both graduate and undergraduate fellowships as well as support for state-of-the-art facilities in these departments.

Ph.D. Students Win GSU Awards

Ph.D. students Saurav Karmakar and Ken Nguyen have won Georgia State University Dissertation Grants. In addition, Mr. Nguyen won the 2011 William M. Suttles Graduate Fellowship, which is given to the most outstanding student who applies for a Dissertation Grant. Dissertation Grants and the Suttles Fellowship are awarded annually to full-time doctoral students in a campus-wide competition.

This is the first time that a computer science Ph.D. student has won the Suttles Fellowship, which was established by the John and Mary Franklin Family Foundation in memory of the fourth president of GSU. Winning is a great honor for Mr. Nguyen and the department, since only one fellowship is awarded across the entire university. (Approximately 15 Dissertation Grants are awarded each year.) Competition for the Suttles Fellowship is "fierce," in the words of the University Research Internal Grant Peer Review Committee, which chooses the winners of Dissertation Grants and the fellowship. The committee noted that this year's applications were "especially strong" and that Mr. Nguyen was selected "due to the high caliber of [his] dissertation and past research."

Mr. Karmakar and Mr. Nguyen will each receive \$1,000 as a result of winning a Dissertation Grant. The money can be used for expenses associated with conducting dissertation research. Mr. Nguyen will receive an additional \$1,500 from the Suttles Fellowship.

Mr. Karmakar's proposal was titled "Syn-tactic and Semantic Analysis and Visualization of Unstructured Texts." His Ph.D. advisor is Dr. Ying Zhu. Mr. Nguyen's proposal was titled "Efficient Multiple Sequence Alignment"; he is advised by Dr. Yi Pan.

Faculty Members Win NSF Grant

Two computer science faculty members have won a \$20,000 grant from the National Science Foundation. Dr. Alex Zelikovsky is the principal investigator for the grant. Dr. Yi Pan is a co-principal investigator, along with Dr. Ion Mandoiu of the University of Connecticut.

The grant was used to provide partial travel support for graduate students, postdoctoral scholars, and keynote speakers attending the 7th International Symposium on Bioinformatics Research and Applications (ISBRA 2011). The conference was held on May 27–29 at Central South University in Changsha, China. Dr. Pan was a steering co-chair for the conference, Dr. Zelikovsky was a program co-chair, and Dr. Mandoiu was a publicity co-chair. (See story on page 5.)

Prasad Wins NSF Grants



Dr. Sushil Prasad

Dr. Sushil Prasad has been awarded two grants by the National Science Foundation. One grant, which is valued at \$50,000 and runs for one year, provides continued funding for Dr. Prasad's

efforts to create a set of core topics in parallel and distributed computing (PDC) for undergraduate computer science and computer engineering students.

Dr. Prasad served as the chair of the IEEE Computer Society Technical Committee on Parallel Processing (TCPP) from 2007 to 2011. In that capacity, he set up a working group that designed a core PDC curriculum. During the 2010–2011 academic year, the group released a preliminary version of the curriculum, collected feedback, and recruited colleagues to try out portions of the curriculum.

Some of the money from the new grant will be used to fund seed grants for early adopters who are willing to incorporate core PDC topics into their courses. The remaining money was used to organize a curriculum workshop at the 25th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2011), which was held in May. The workshop, known as the First NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar 2011), was co-sponsored by Intel.

Dr. Prasad received a second NSF grant for \$20,000. This grant was used to fund travel for student authors of papers in the IPDPS 2011 conference, workshops, and Ph.D. forum. IPDPS is the flagship conference of TCPP, which administered the travel grants.

Karmakar Wins GSU Student Leader of the Year Award

Ph.D. student Saurav Karmakar has been named the 2011 Royal Flame Student Leader of the Year. The award, which is given annually to an outstanding GSU student leader, was presented at the Royal Flame Awards ceremony on April 18.



Student Organizations Advisor Ebony Rose and Saurav Karmakar

Mr. Karmakar has been the chair of the GSU student chapter of the ACM for the past two years. Under his leadership, the chapter won the 2009–2010 ACM Student Chapter Excellence Award for Outstanding Recruit-

ment Program. He is also the founder of the GSU student branch of the IEEE and the Computer Science Club. Mr. Karmakar has been active outside the department as well, having helped organize viewings of the recent India-Pakistan and India-Sri Lanka World Cup cricket matches at the Student Recreation Center.

Mr. Karmakar was chosen as the Student Leader of the Year from a field of 18 candidates. He is the first student in the history of the Department of Computer Science to win a Royal Flame award.

The awards ceremony also included recognition of GSU students chosen for *Who's Who Among Students in American Universities & Colleges*. Four computer science Ph.D. students (Promita Bose, Debraj De, Jing He, and Shouling Ji) were among those selected for inclusion in the 2011 edition. The GSU student branch of the IEEE was acknowledged at the ceremony as one of 16 nominees for Student Organization of the Year.

Student ACM Chapter Elects New Officers

The Georgia State University student chapter of the ACM recently elected officers for the 2011–2012 academic year. The new officers are:

Chair: Marco Valero

Vice Chair: Nick Mancuso

Treasurer: Emmanuel Thomas

Program Chair: Umar Arshad

Publicity Chair: M. Daniel Gibbons

Membership Chair: Haidong Xue

Webmaster: Dinesh Agarwal

Karmakar in B&B Fellow Spotlight

Ph.D. student Saurav Karmakar was featured in the Brains & Behavior Fellow Spotlight for the month of March. The story discusses Mr. Karmakar's background, his current research, his leadership in student activities, and the honors he has won. It is accompanied by a photograph of Mr. Karmakar sitting in front of the Petit Science Center Visualization Wall.

Brains & Behavior is a Georgia State initiative that unites researchers studying how nervous systems produce behavior. B&B research groups foster collaboration among faculty from Biology, Chemistry, Computer Information Systems, Computer Science, Mathematics and Statistics, Philosophy, Physics and Astronomy, and Psychology. The B&B program is administered by GSU's Neuroscience Institute. Mr. Karmakar is one of six computer science Ph.D. students currently holding a B&B fellowship.

IEEE Student Branch Launched

In December 2010, students from the Department of Computer Science established a GSU branch of the Institute of Electrical and Electronics Engineers (IEEE). With over 395,000 members in 160 countries, IEEE is the world's largest technical society, serving professionals involved in all aspects of the electrical, electronic, and computing fields.

The IEEE branch will sponsor talks by invited speakers on the latest topics in the field of engineering and computing technologies. It will also offer workshops on such topics as robotics. The new branch joins GSU's student chapter of the ACM, another society for computing professionals. Although both organizations will host speakers on a regular basis, IEEE meetings will focus more on engineering topics and include more hands-on demonstrations. The two student organizations are planning to work together and periodically sponsor joint activities.

Officers of the IEEE branch are:

Chair: Saurav Karmakar

Vice Chair: Debraj De

Treasurer: Mingsen Xu

Webmaster: Dinesh Agarwal

Secretary: Satish Puri

Program Chair: Ravi Teja Pamulapati

Publicity Chair: Guangming Wang

Membership Chair: Renzo Hernandez

Recreation Chair: Kelvina Burrell

Dr. Sushil Prasad is the counselor for the new branch, with Dr. Raheem Beyah, Dr. Anu Bourgeois, Dr. Xiaojun Cao, Dr. Xiaolin Hu, Dr. Yingshu Li, Dr. WenZhan Song, and Dr. Michael Weeks serving as advisors.

The IEEE branch held its first public event on February 2. Ph.D. student Dinesh Agarwal gave an overview of Drupal, a tool that was used to build the Department of Computer Science website.

Membership in the IEEE branch will be free during the organization's first year. The application form is available at tinyurl.com/gsuieee.

Computer Science Club Holds First Event

The Georgia State University Computer Science Club held its first event on Friday, March 18. The "meet and greet" format allowed students and faculty to mingle informally.

The Computer Science Club was founded last December as a way to bring together computer science students and faculty in a social setting. The club currently has five officers:

President: Saurav Karmakar

Vice President: Shagun Kariwala

Secretary: Kevin Hariyanto

Social Event Coordinator: Weiling Li

Webmaster: Vijetha Shivarudraiah

Dr. Michael Weeks is the club's advisor.

The club plans to host free events twice a semester. All computer science students and faculty are encouraged to attend. Membership in the club is free; to apply, visit the club's website (www.cs.gsu.edu/~csclub/). The club also has a Facebook group.

Agarwal Wins Intel Microgrant

Ph.D. student Dinesh Agarwal has won a \$1,000 microgrant in the second round of the Microgrant Awards for Parallelism in the Classroom Contest, a competition sponsored by the Intel Academic Community.

The purpose of the contest is to encourage the development of courseware for teaching parallel programming. The contest has three rounds; in each round, three winners are chosen to receive a grant of \$500, \$1,000, or \$1,500.

Mr. Agarwal's winning proposal, titled "Exploring SSE Intrinsics on Multicores," involves bringing hands-on programming experience in shared-memory and message-passing parallel architectures to students in CSc 4310/6310 (Parallel and Distributed Computing). In particular, the proposal calls for students in the course to experiment with Intel's Manycore Testing Lab.

Dr. Sushil Prasad is Mr. Agarwal's Ph.D. advisor.

Computer Science Students Receive Awards

The Department of Computer Science recently gave awards to five outstanding undergraduate and graduate students:

Outstanding Senior Award: Lemuel Shelly

Undergraduate Research Award: M. Daniel Gibbons

Graduate Teaching Award: Adrian Caciula

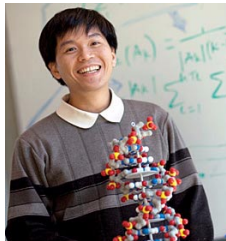
Graduate Research Award: Yang Wang

Outstanding Service Award: Saurav Karmakar

Lemuel Shelly and Yang Wang received their awards at the annual Arts and Sciences Honors Night ceremony, which was held on April 20 in the Student Center Ballroom.

Nguyen Featured in *GSU Magazine*

Ph.D. student Ken Nguyen was featured in the Summer 2011 issue of *GSU Magazine*. The article “Searching for Patterns,” written by Jeremy Craig, discusses Mr. Nguyen’s research into



Ken Nguyen

efficient algorithms for the analysis of multiple sequence alignments (MSAs). An MSA is a sequence alignment of three or more biological sequences, usually protein, DNA, or RNA. Fast algorithms for analyzing MSAs have applications in drug research as well as other fields, including linguistics and marketing research.

In February, Mr. Nguyen won the William M. Suttles Graduate Fellowship (see story on page 6). Dr. Yi Pan is Mr. Nguyen’s Ph.D. advisor.

GSU Magazine is a quarterly publication distributed to alumni, donors, and other friends of the university.

Wang Wins Travel Grants for INFOCOM and ICCCN

Ph.D. student Yang Wang won travel grants to attend two leading networking conferences, the 30th IEEE International Conference on Computer Communications (IEEE INFOCOM 2011) and the International Conference on Computer Communications and Networks (ICCCN 2011).

Mr. Wang was one of 21 students to win a travel grant for IEEE INFOCOM 2011. He received \$1,250 to be used for registration fees as well as hotel, airfare, and meals. At the conference, he presented the paper “A Study of the Routing and Spectrum Allocation in Spectrum-sliced Elastic Optical Path Networks,” which he co-authored with Dr. Yi Pan and Dr. Xiaojun Cao, his Ph.D. advisor. INFOCOM was held in Shanghai, China, on April 10–15.

Mr. Wang was also one of 10 students to win a travel grant for ICCCN 2011. He received \$1,000 toward registration and travel expenses. At ICCCN, he presented the paper “Wavelength Retuning in Optical Waveband Switching Networks,” co-authored by Dr. Cao. The conference was held in Maui, Hawaii, on July 31–August 4.

GSU Chapter of WeCAN Founded

GSU computer science students have founded a chapter of WeCAN (Women Computing in Atlanta), an organization for women students and faculty members in Atlanta-area computer science programs. WeCAN was started by two GSU Ph.D. students, Mary Hudachek-Buswell and Stefanie Markham. The officers of the GSU student chapter are Harini Pillalamarri (president) and Ashley Singleton (vice president).

The goal of WeCAN and its GSU student chapter is to create a support system for women in computer science by arranging workshops, field trips, and open houses, providing opportunities to collaborate with WeCAN members from other institutions, encouraging attendance at conferences such as the Grace Hopper Celebration of Women in Computing, and mentoring underclassmen. The chapter’s first activity of 2011 was a members-only trip to Hewlett-Packard on February 11.

For more information about the chapter, email wecan.gsu@gmail.com or visit WeCAN on Facebook.

Have something to say?

Mail suggestions and alumni news to wemaster@cs.gsu.edu

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