pointers

GEORGIA STATE UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE

Prasad Wins TCPP Outstanding Service Award

Dr. Sushil Prasad

Professor Sushil Prasad has won the Outstanding Service Award from the IEEE Computer Society Technical Committee on Parallel Processing. The award is given in recognition of major professional service contributions to the parallel, distributed, and high-performance computing community.

Dr. Prasad served as the chair of TCPP from 2007 to 2011. He created the NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing, which he continues to lead, as well as the NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar). Dr. Prasad initiated the Ph.D. Forum at the IEEE International Parallel and Distributed Processing Symposium (IPDPS). He created a student travel grant program for IPDPS and other TCPP conferences. He has also served extensively on conference committees, with 44 different roles in just the last two years.

The TCPP Outstanding Service Award has been given annually since 2008. Previous winners include Dr. Viktor Prasanna (University of Southern California), Dr. Sartaj Sahni (University of Florida), and Dr. Albert Zomaya (University of Sydney).

Department Hosts NSF REU Site

The Department of Computer Science is hosting a National Science Foundation Research Experiences for Undergraduates (REU) site during the summers of 2012, 2013, and 2014. The site allows computer science undergraduates to gain research experience in high-performance data mining under the supervision of faculty mentors and industrial mentors.

This summer's REU program ran for eight weeks, from May 30 to July 24. Participants in the program worked on data mining research projects that incorporated parallel computing, cloud computing, and machine learning. They also explored applications of data mining, including bioinformatics and network security.

Ten students were chosen for the 2012 REU program from 58 applicants. Three participants (David Gibbs, Shamiya Gissentanna, and Sheneeka Ward) were GSU students. The other seven were from Morehouse College, North Carolina Agricultural and Technical State University, Southern Polytechnic State University, University of Illinois at Urbana-Champaign, University of Maryland, University of Tennessee, and Virginia Commonwealth University. Each student received a $4,000 stipend plus $2,300 for housing and meals and $600 for travel expenses.

Four computer science faculty members are serving as core mentors for the program: professor Robert Harrison, department chair Yi Pan, professor Raj Sunderraman, and associate professor Yanqing Zhang. The industrial mentors are Dr. Zejin Ding, a security researcher at Barracuda Labs, and Dr. Yunchun Tang, a software engineer at Facebook. Georgia Tech associate professor Raheem Beyah is an external mentor who served as a guide when REU students visited Tech's Communications Assurance and Performance Group.

The REU site is funded by a $309,483 NSF grant. Dr. Zhang is the principal investigator, Dr. Pan is co-PI, and Dr. Harrison and Dr. Sunderraman are senior investigators. The grant was awarded by NSF's Office of Cyberinfrastructure, which supports the development of hardware and software infrastructure for science and engineering research and education.
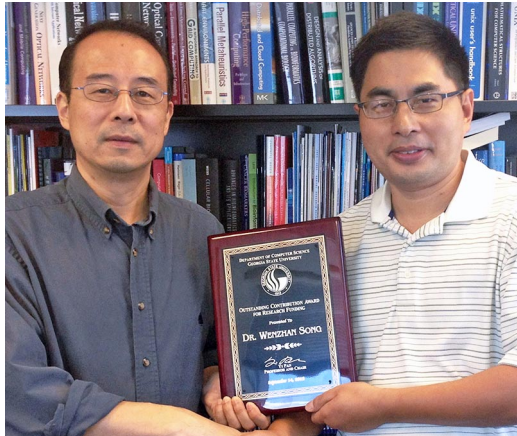
CONTENTS

Chair's Message

I am proud to announce that Dr. WenZhan Song is the first winner of our department's Outstanding Contribution Award for Research Funding. He received a plaque at the department faculty meeting on September 14. Although Dr. Song joined GSU just two years ago, he has already compiled an impressive record of National Science Foundation research funding. He is the lead principal investigator for a $1.83 million collaborative grant for volcano seismic real-time imaging. He is also one of the investigators on a $1.87 million collaborative grant to study foundational issues related to the development of smart grids.

I am also happy to announce that a wireless water-usage metering system developed by Dr. Song and one of his Ph.D. students has been licensed to local company Avyzo Systems. Finally, I congratulate Dr. Song on receiving tenure. We wish him many happy years at Georgia State.

Dr. Yi Pan and Dr. WenZhan Song

Congratulations are also due to Dr. Sushil Prasad and Dr. Yanqing Zhang. Dr. Prasad won the Outstanding Service Award from the IEEE Computer Society Technical Committee on Parallel Processing. While serving as the chair of TCPP from 2007 to 2011, he created the NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing, which he continues to lead. Dr. Zhang is the principal investigator for a $300,000 NSF grant that will fund an NSF Research Experiences for Undergraduates (REU) site.

Our department's staff and graduate students have also achieved distinction this year. Staff member Tammie Dudley was one of just four people at GSU to win a Sparks Award (see story on page 5). Ph.D. student Dinesh Agarwal competed in the U.S. Finals of the Imagine Cup 2012, a contest sponsored by Microsoft (see story on page 6). This is a very impressive acomplishment.

Finally, I am pleased to announce that our department will receive funding from GSU's Second Century Initiative to hire three faculty members in 2013. For more information about these positions, please see page 3.

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."

Li Joins Board of Networking Networking Women

Associate professor Yingshu Li has joined the board of Networking Networking Women (N^2 Women). Dr. Li will serve a two-year term as Fellowship Co-Chair along with Dr. Katia Jaffres, a professor at the University of Toulouse in France.

Dr. Yingshu Li

N^2 Women, which has over 320 members, is an organization for women who work as researchers in the fields of communications and computer networking. In her new position, Dr. Li will help decide the winners of the N^2 Women Student Fellowship, which partially covers a student's travel cost to a meeting where an N^2 Women event will be held. In exchange, the student must help organize the N^2 Women meeting. Between seven and ten fellowships are awarded in a typical year.

N^2 Women held its first meeting in 2006. The organization's most recent event was a luncheon on December 5 at IEEE GLOBECOM 2012 in Anaheim, California.

N^2 Women is a program of ACM's Special Interest Group on Mobility of Systems, Users, Data, and Computing (SIGMOBILE), with support from the IEEE Communications Society, Microsoft Research, and HP Labs.

Faculty Members Win NSF Grant for ISBRA Travel

Two computer science faculty members have won a $20,000 grant from the National Science Foundation. The grant was used to provide travel support for graduate students and postdoctoral scholars attending the 8th International Symposium on Bioinformatics Research and Applications (ISBRA 2012). The conference was held on May 21–23 at the University of Texas at Dallas.

Professor Raj Sunderraman is the principal investigator for the grant. Professor Alex Zelikovsky is a co-principal investigator, along with Dr. Ovidiu Daescu (University of Texas at Dallas) and Dr. Ion Mandoiu (University of Connecticut). Dr. Sunderraman and Dr. Daescu were the general chairs for the conference, Dr. Zelikovsky was a member of the conference steering committee, and Dr. Mandoiu was one of the program chairs.

Funds from the grant were used to provide 23 travel fellowships to ISBRA attendees. An additional six fellowships were awarded using money from registration fees. GSU Ph.D. students Adrian Caciula, Olga Glebova, Nick Mancuso, Hamed Salooti, Blanche Temate, and Bassam Tork were among those receiving fellowships.

ISBRA 2012 Held in Dallas

In May, the Department of Computer Science helped organize the 8th International Symposium on Bioinformatics Research and Applications (ISBRA 2012), 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 conference was held at the University of Texas at Dallas.

ISBRA 2012 drew over 90 attendees from Belgium, Brazil, Canada, the Czech Republic, Germany, Hong Kong, India, Italy, Poland, Saudi Arabia, Singapore, Sweden, and Switzerland as well as 23 U.S. states and territories. The symposium featured 26 extended abstracts (selected by the program committee from 66 submissions), 16 short abstracts, and 21 posters.

Five distinguished scientists gave keynote talks at the conference: Dr. Bhaskar Dasgupta (University of Illinois at Chicago), Dr. Cynthia Gibas (University of North Carolina at Charlotte), Dr. Ambuj Singh (University of California, Santa Barbara), Dr. Dong Xu (University of Missouri), and Dr. Michael Zhang (University of Texas at Dallas).

The proceedings of ISBRA 2012 were published as volume 7292 of the Springer Lecture Notes in Bioinformatics series. The authors of selected extended abstracts will be invited to submit full versions to a peer-reviewed special issue of *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. All other authors will be invited to submit full versions to a peer-reviewed volume to be published in *BMC Bioinformatics*.

Three best poster awards were presented at the conference:

- Serghei Mangul, Adrian Caciula, Nicholas Mancuso, Olga Glebova, Ion Mandoiu, and Alex Zelikovsky, "An Integer Programming Approach to Novel Transcript Reconstruction from Paired-End RNA-Seq Reads" (first prize, $150)
- Sahar Al Seesi and Ion Mandoiu, "Inference of Allele Specific Expression Levels from RNA-Seq Data" (first prize, $150)
- Isra Al-Turaiki, Ghada Badr, and Hassan Mathkour, "Structural Motif Discovery Algorithms: Classification and Benchmarks" (second prize, $100)

The members of the ISBRA 2012 steering committee were Dr. Dan Gusfield (University of California, Davis), Dr. Ion Mandoiu (University of Connecticut), Dr. Yi Pan (GSU), Dr. Marie-France Sagot (INRIA), and Dr. Alex Zelikovsky (GSU), with Dr. Pan serving as committee chair. The general chairs were Dr. Ovidiu Daescu (UT Dallas) and Dr. Raj Sunderraman (GSU). The program chairs were Dr. Leonidas Bleris (UT Dallas), Dr. Mandoiu, Dr. Russell Schwartz (Carnegie Mellon), and Dr. Jianxin Wang (Central South University). Dr. Anu Bourgeois (GSU) and Dr. Sunderraman served as finance chairs. Five GSU faculty members (Dr. Robert Harrison, Dr. Pan, Dr. Sunderraman, Dr. Zelikovsky, and Dr. Yanqing Zhang) were on the program committee.

Financial support for ISBRA 2012 was provided by the National Science Foundation, Georgia State's Department of Computer Science, and the Department of Computer Science at UT Dallas. Next year's ISBRA will be held at the University of North Carolina at Charlotte on May 20–22, 2013.

Faculty Positions Available

The Department of Computer Science is currently accepting applications for three faculty positions:

Full Professor – Bioinformatics

Assistant/Associate Professor – Interferometric Imaging or Astroinformatics/Image Database Development and Mining

Associate/Full Professor – Content-Based Visual Information Retrieval

All positions will begin in Fall Semester 2013. Funding for these positions is provided by Georgia State University's Second Century Initiative. For more information, please visit *www.cs.gsu.edu/?q=faculty_positions*.

Zelikovsky Delivers Keynote at RECOMB Workshop

Dr. Alex Zelikovsky

Professor Alex Zelikovsky was one of two keynote speakers at the Second Annual RECOMB Satellite Workshop on Massively Parallel Sequencing (RECOMB-seq 2012). His topic was "Reconstruction of Haplotype Spectra from NGS Reads."

Dr. Zelikovsky also presented a poster on "Quasispecies Spectrum Reconstruction using Multi-commodity Flows," co-authored by Ph.D. students Nicholas Mancuso and Bassam Tork, Dr. Pavel Skums of the Centers for Disease Control and Prevention, and Dr. Ion Mandoiu of the University of Connecticut.

The RECOMB-seq workshop was held in conjunction with the 16th Annual International Conference on Research in Computational Molecular Biology (RECOMB 2012). RECOMB-seq took place on April 19–20 in Barcelona, Spain, with RECOMB following on April 21–24. RECOMB, which has been held annually since 1997, is considered to be one of the top conferences in the field of computational biology.

Faculty and Staff Honored for Years of Service

Four computer science faculty and staff members were honored at Georgia State's 2012 Service Recognition Ceremony on April 6. Two faculty members reached a service milestone during the 2011 fiscal year:

Louis Henry – 10 years
Dr. Raj Sunderraman – 15 years

Two staff members also reached a milestone during this period:

Adrienne Martin – 20 years
Venette Rice – 25 years

March 16, 2012

Loudermilk Center
40 Courtland Street NE
Atlanta, GA 30303

Hosted by Georgia State University
in conjunction with the U.S. Army War College.

VISUAL PROPAGANDA
AND ONLINE RADICALIZATION

Conference on Visual Propaganda Held in March

The Department of Computer Science contributed to the Conference on Visual Propaganda and Online Radicalization, which was held on March 16 at the Loudermilk Center. The center is located at 40 Courtland Street, adjacent to the Georgia State University campus.

Dr. Saeid Belkasim

The conference was organized by GSU's Transcultural Conflict and Violence Initiative in conjunction with the U.S. Army War College. TCV is an interdisciplinary effort that includes faculty members from Computer Science, Communication, Middle East Studies, Religious Studies, Political Science, and English. The goal of the TCV Initiative is to understand the distribution and impact of utterances, images, and performances that contribute to global violence and conflict. The conference brought together top scholars from the U.S., the Middle East, and Europe to discuss the visual component of videos produced by jihadist groups, in the hope that better understanding will lead to more effective countermeasures.

Associate professor Saeid Belkasim, a well-known expert in pattern recognition and image processing, was a speaker at the conference. Five other computer science faculty members are also involved in the TCV Initiative: Dr. Yi Pan, Dr. Raj Sunderraman, Dr. Michael Weeks, Dr. Yanqing Zhang, and Dr. Ying Zhu. Last year, the TCV Initiative received funding from GSU's Second Century Initiative to hire three faculty members, including one in computer science.

The U.S. Army's Strategic Studies Institute was a conference partner, along with GSU's Department of Communication, Department of Computer Science, Center for International Media Education, and Middle East Institute.

Faculty Win Internal Grants

Three Computer Science faculty members recently won internal grants from Georgia State University. In the fiscal year 2013 competition, 72 applications were submitted; 34 grants with a total value exceeding $350,000 were awarded. The winners were chosen by an Internal Grant Peer Review Committee consisting of 25 senior faculty members.

Associate professors Ying Zhu and Yanqing Zhang, together with associate professor Caitlin Dooley of Early Childhood Education, won a Research Initiation Grant. Their project, titled "Exploring New Reading Assessment Methods in Early Childhood Education with Mobile Reading Devices," involves developing a digital reading assessment application for use with mobile reading devices. Research Initiation Grants are designed to promote scholarly and artistic activity and to foster academic excellence.

Associate professor Hassan Babaie, who holds a joint appointment in Geosciences and Computer Science, won a Scholarly Support Grant. The goal of his project, titled "Building the Prototype Geosciences Linked Open Data Cyberinfrastructure," is to develop a prototype data management infrastructure that will integrate data collected by the three geosciences communities (land, ocean, and space). Scholarly Support Grants are designed to support a scholarly or artistic activity that will result in a significant and prestigious product. Only three Scholarly Support Grants were awarded for fiscal year 2013.
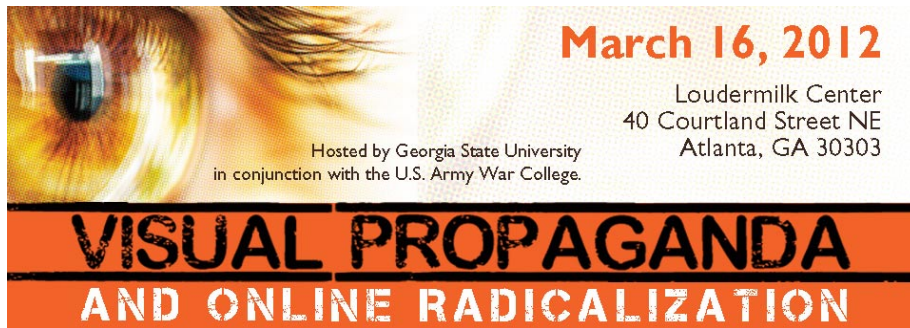

Recent Ph.D. Graduates

Anjum Chida. *Dissertation:* Protein Tertiary Model Assessment Using Granular Machine Learning Techniques. *Advisor:* Dr. Yanqing Zhang. *Current position:* Lecturer, Department of Computer Science, Kennesaw State University. (May 2012)

Wooyoung Kim. *Dissertation:* Innovative Algorithms and Evaluation Methods for Biological Motif Finding. *Advisor:* Dr. Yi Pan. *Current position:* Acting assistant professor, Computing and Software Systems Program, University of Washington Bothell. (May 2012)

Gang Shen. *Dissertation:* Shadow Price Guided Genetic Algorithms. *Advisor:* Dr. Yanqing Zhang. *Current position:* System specialist, Macy's. (May 2012)

Marco Valero-Rangel. *Dissertation:* DI-SEC: A Distributed Security Framework for Heterogeneous Wireless Sensor Networks. *Advisors:* Dr. Raheem Beyah and Dr. Yingshu Li. *Current position:* Senior R&D architect, Internap Network Services Corporation. (May 2012)

Dudley Wins Sparks Award

Tammie Dudley

Staff member Tammie Dudley has won a 2012 George M. Sparks Award. Named for Dr. George McIntosh Sparks, Georgia State's president from 1928–1957, the Sparks Awards recognize faculty, staff, and students who exemplify a willingness to go the extra mile with good humor and perseverance. Ms. Dudley was one of only four people to win the Sparks Award this year. Sparks Awards have been presented annually since 1985; Ms. Dudley is the first computer science faculty or staff member to win the award.

Ms. Dudley is currently an administrative specialist, focusing on academics. She was hired by the Department of Computer Science in 2000 to assist with Yamacraw, an initiative launched by former Georgia governor Roy Barnes in an effort to position the state as a high-tech leader. Her original responsibilities included marketing, hosting workshops and information sessions, and advising students interested in earning a Yamacraw certificate. Once the Yamacraw initiative ended, she became a regular staff member. Her duties now include first-line advisement for both undergraduate and graduate students, tracking applications for graduate study, registering graduate students for courses, and monitoring graduate student progress.

The Sparks Awards were presented at Georgia State's 2012 Service Recognition Ceremony on April 6.

Prasad Wins NSF Grant for PDC Education Workshop

Professor Sushil Prasad has been awarded a $50,000 grant by the National Science Foundation. Money from the grant was used to support the Second NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar 2012), which was held on May 21 in conjunction with the 26th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2012). Dr. Prasad was the chair of the workshop and a member of its program committee.

Dr. Prasad served as the chair of the IEEE Computer Society Technical Committee on Parallel Processing from 2007 to 2011. In that capacity, he created a working group known as the NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing, which is developing a core parallel and distributed computing curriculum for undergraduate computer science and computer engineering majors.

Faculty Members Win PDC Curriculum Grants

Computer Science faculty members have won two grants from the NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing.

Department chair Yi Pan and professor Sushil Prasad won a $2,500 grant from the Fall 2011 Early Adopter Program, one of only 18 grants awarded. Their proposal was titled "A Department-wide Multi-course Multi-semester Adoption at Georgia State University." Early Adopter grants are designed to encourage faculty to incorporate parallel and distributed computing topics into their courses.

The second award was a $2,500 travel grant to attend the Second NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar 2012), which was held in Shanghai on May 21 in conjunction with the 26th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2012). At the workshop, associate professor Anu Bourgeois and Dr. Pan presented a poster titled "Incorporating PDC Topics throughout the Undergraduate Computer Science Curriculum."

The goal of the NSF/IEEE-TCPP Curriculum Initiative is to create a parallel and distributed computing curriculum for undergraduate computer science and computer engineering students. Dr. Prasad established the initiative while serving as chair of the IEEE Computer Society Technical Committee on Parallel Processing from 2007 to 2011.

Prasad Gives Invited Talk at Microsoft Cloud Workshop

Professor Sushil Prasad gave an invited talk at the Microsoft Research Cloud Futures 2012 Workshop, held on May 7–8 in Berkeley, California. Dr. Prasad was one of only three speakers at the workshop's plenary session on May 7. His talk, titled "Cloud Computing for Fundamental Spatial Operations on Polygonal GIS Data," was co-authored by Ph.D. students Dinesh Agarwal, Satish Puri, and Xi He.

The Cloud Futures Workshop, held annually since 2010, brings together leaders from academia, industry, and government to discuss the role of cloud computing in a variety of research and educational areas. This year's workshop was a joint venture between the Microsoft Research Connections, Azure Research Engagement, and Developer and Platform Evangelism Academic groups. The workshop was held in association with and supported by the University of California, Berkeley.

Pan Gives Keynote Talk at BICoB 2012

Department chair Yi Pan gave the keynote talk at the 4th International Conference on Bioinformatics and Computational Biology (BICoB 2012), which was held in Las Vegas on March 12–14. Dr. Pan was the only invited keynote speaker at the conference; his talk was titled "Multiple Biological Sequence Alignment: Scoring Functions, Algorithms, and Evaluations." BICoB is a venue for researchers and practitioners in the fields of bioinformatics, computational biology, systems biology, medical informatics, and related disciplines. The conference was sponsored by the International Society for Computers and Their Applications, the University of Houston-Clear Lake, and the University of Illinois at Chicago. Professor Alex Zelikovsky was a member of the program committee.

Microsoft Donates Equipment to DiMoS

Microsoft Corporation recently donated three Windows Phones, one Xbox 360 video game console, and two Windows Kinect devices to the department's Distributed Mobile Systems Laboratory (DiMoS). The donated equipment will be available for computer science students to use for projects. Interested students should contact professor Sushil Prasad, the director of DiMoS.

The donation was arranged by Bob Familiar, the Director of Audience Evangelism for the East Region of Microsoft's Developer & Platform Evangelism Division.

DiMoS conducts research in the areas of distributed and mobile computing. Activities include the design and implementation of middleware for mobile devices, security in distributed environments, and the design and implementation of ad-hoc sensor networks.

Recent Departmental Colloquia

February 20. "Metabolomics and Its Application in Biomarker Discovery and Systems Biology Research," *Dr. Habtom W. Ressom,* Georgetown University Medical Center

February 21. "Scheduling and Mapping of Communicating Multi-processor Tasks," *Dr. Thomas Rauber,* University of Bayreuth

March 12. "Catalogs, Data Analysis, and Visualization Techniques for Exoplanet Discovery," *Joshua Pepper,* Vanderbilt University

Agarwal Reaches Imagine Cup Finals

Dinesh Agarwal

Ph.D. student Dinesh Agarwal recently competed in the Imagine Cup 2012 U.S. Finals. The Imagine Cup, which has been held annually for the past ten years, is an international computing contest sponsored by Microsoft Corporation. Since 2003, over 1.4 million students have participated in the event.

This year's Imagine Cup allowed students to enter a Software Design competition, two Game Design competitions, and five additional challenges. In the Software Design competition, teams competed within geographic regions, with regional winners advancing to the worldwide finals on July 6–10 in Sydney, Australia. Mr. Agarwal entered the U.S. Software Design competition as a one-person team.

by Microsoft®

In the first round of the competition, teams submitted project plans inspired by this year's Imagine Cup theme ("imagine a world where technology helps solve the toughest problems"). In the second round, each team submitted a working prototype, an updated project plan, and a video demonstrating the capabilities of its software. (Mr. Agarwal's video can be viewed on YouTube.) During the final round, held on April 20–23 at Microsoft headquarters, teams participated in 20-minute live presentations and 10-minute Q&A sessions. A team from Arizona State University won this round and will represent the U.S. in the worldwide finals.

Mr. Agarwal's entry was a software system named Crayons based on the Windows Azure cloud platform. The goal of Crayons is to speed up geographic information systems used by decision-makers during emergencies, including natural disasters. By using parallel algorithms and a cloud platform with hundreds or thousands of computers, the performance of these systems can be greatly improved.

Over 113,000 students registered to compete in the U.S. Imagine Cup, but only ten Software Design teams reached the final round, along with 12 Game Design teams. Each final-round team member received an Acer laptop and a Nokia Lumia 800 Windows phone, courtesy of sponsors Acer and Nokia.

Mr. Agarwal's Imagine Cup entry was based on work he did for Georgia State's Distributed Mobile Systems Laboratory (DiMoS). Professor Sushil Prasad, the director of DiMoS, also serves as Mr. Agarwal's Ph.D. advisor. Funding for Crayons was provided by a National Science Foundation grant to Dr. Prasad.

Students Participate in Undergraduate Research Conference

Two undergraduate computer science majors participated in the sixth annual Georgia State Undergraduate Research Conference (GSURC 2012), which was held on March 21 in the Student Center. GSURC serves as a showcase for scholarly and creative projects produced by Georgia State undergraduates. At this year's conference, students from 35 departments gave 94 poster presentations, 38 oral presentations, and nine artistic presentations.

Computer science major Brendan Benshoof gave a poster presentation titled "Exploration of Wearable Computing." His project involved designing and building a wearable computer. After writing software to test user interfaces on the computer, Mr. Benshoof then experimented to determine which human-computer interaction techniques are most effective for wearable devices. His faculty sponsor was associate professor Michael Weeks.

Dr. Michael Weeks and Brendan Benshoof

Another CS major, Mackenzie Bechtel-Hall, gave an oral presentation titled "Hardware Trojans: Attacking, Detecting, and Defending." Hardware trojans occur when integrated circuits are modified to be malicious or to monitor the functions of their applications. Mr. Bechtel-Hall demonstrated how hardware trojans could infiltrate a military sensor network. He then devised methods to detect and prevent such attacks. His work was done jointly with Ph.D. student Marco Valero; associate professor Anu Bourgeois was their faculty sponsor.

Karmakar Helps GSU Obtain NSF Grant

Saurav Karmakar

Recent Ph.D. graduate Saurav Karmakar has helped Georgia State University obtain a $175,000 National Science Foundation grant. Funding from the two-year grant will be used to develop methods and tools for discovering and visualizing the stories of hidden victims and unidentified perpetrators in collections of human rights violations reports and witness statements. The project will use a combination of natural language processing and qualitative language analysis to uncover stories that may exist only as fragments scattered across thousands or even millions of documents. In particular, the researchers will develop an automated reader that can reconstruct stories from fragments, along with an interface for navigating those stories.

The grant's principal investigator is Ben Miller, an assistant professor in GSU's Department of English. Dr. Karmakar contributed to the initial proposal that led to the grant and will be employed using funds from the grant. According to Dr. Miller, his work is "central to the success of the project."

The grant was awarded through the Digging into Data Challenge (DID), an international competition designed to foster research collaboration across countries and to encourage the analysis of large data sets in the social sciences and humanities. The winners of the second round of DID were announced in January; of the 67 teams that competed, only 14 were chosen to receive funding. The money awarded to the winning teams is provided by eight international research funding organizations, representing Canada, the Netherlands, the United Kingdom, and the United States.

Dr. Miller's research team includes Dr. George Pullman, an associate professor of English at GSU and Director of the Center for Instructional Innovation, Dr. Karthikeyan Umapathy (University of North Florida), and Dr. Lu Xiao (University of Western Ontario). Dr. Xiao, who is the Canadian team lead, will be supported by a $60,700 DID grant from Canada's Social Sciences and Humanities Research Council.

Sample documents to be searched will be supplied by the Benetech Human Rights Data Analysis Group, a part of the Benetech Human Rights Program.

Ph.D. Students Win Poster Awards at MBD Research Day

Two Ph.D. students won awards for poster presentations at the 2012 Molecular Basis of Disease Research Day, which was held on June 8 in the Student Center Ballroom. Zainab Haydari won first place among eight posters created by students from the Department of Computer Science, with Adrian Caciula finishing second. Ms. Haydari received a prize of $150 for her winning poster; Mr. Caciula received $100. A total of 42 posters were presented at the event.

Ms. Haydari's poster, "Semi Automatic Epilepsy Spike Detection from EEG Signal Using Genetic Algorithm and Wavelet Transform," was co-authored by Dr. Hamid Soltanian-Zadeh of the Henry Ford Health System and associate professor Yanqing Zhang, her Ph.D. advisor.

Mr. Caciula's poster was titled "An Integer Programming Approach to Novel Transcript Reconstruction from Paired-End RNA-Seq Reads." His co-authors were Ph.D. students Serghei Mangul and Nicholas Mancuso, Dr. Ion Mandoiu of the University of Connecticut, and professor Alex Zelikovsky, his Ph.D. advisor.

In addition to posters, MBD Research Day featured a keynote address by Dr. Phang C. Tai, the outgoing chair of the Department of Biology. There were also oral presentations by seven MBD Fellows, including two from Computer Science. Mr. Mancuso gave a talk on "Assembling Viral Haplotypes Using Network Flows Given Amplicons Read Data," and Anjum Chida spoke on "Protein Model Assessment Using Machine Learning Techniques."

Four CS faculty members assisted at the event. Department chair Yi Pan was a poster judge, along with professor Raj Sunderraman and Dr. Zelikovsky. Dr. Zhang was an oral presentation judge.

Jing He Wins Networking Networking Women Travel Grant

Ph.D. student Jing He won a $750 student travel grant to attend the Second Networking Networking Women Workshop, which was held on March 26 at IEEE INFOCOM 2012 in Orlando. The grant was awarded by Networking Networking Women (N^2 Women), an organization for women who work as researchers in the fields of communications and computer networking. Associate professor Yingshu Li is Ms. He's Ph.D. advisor. N^2 Women is a program of ACM's Special Interest Group on Mobility of Systems, Users, Data, and Computing (SIGMOBILE), with support from the IEEE Communications Society, Microsoft Research, and HP Labs.

Mangul Wins Three Travel Grants

Serghei Mangul

Ph.D. student Serghei Mangul won travel grants to attend three major bioinformatics conferences. He received a $1,200 travel grant to attend the 2nd IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS 2012), which was held on February 23–25 in Las Vegas. Mr. Mangul presented a paper at the 2nd Workshop on Computational Advances for Next Generation Sequencing (CANGS 2012), which was held in conjunction with ICCABS 2012. The paper, titled "Novel Transcript Reconstruction from Paired-End RNA-Seq Reads Using Fragment Length Distribution," was co-authored by Ph.D. student Adrian Caciula, Dr. Ion Mandoiu of the University of Connecticut, and professor Alex Zelikovsky, Mr. Mangul's Ph.D. advisor.
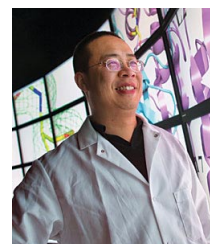
Mr. Mangul also received a $600 travel award to attend the 16th Annual International Conference on Research in Computational Molecular Biology (RECOMB 2012). The conference took place on April 21–24 in Barcelona, Spain. He presented a poster titled "An Integer Programming Approach to Novel Transcript Reconstruction from Paired-End RNA-Seq Reads." His co-authors were Adrian Caciula, Ph.D. student Nicholas Mancuso, Dr. Mandoiu, and Dr. Zelikovsky.

Finally, Mr. Mangul received a $500 travel fellowship from the 2012 Intelligent Systems for Molecular Biology conference (ISMB 2012), which was held on July 15–17 in Long Beach, California. Mr. Mangul was one of 103 travel fellows selected from 226 applicants. He presented a poster titled "An Integer Programming Approach to Novel Transcript Reconstruction from Paired-End RNA-Seq Reads." His co-authors were Adrian Caciula, Dr. Onur Sakarya of Life Technologies and Ion Bioinformatics, Dr. Mandoiu, and Dr. Zelikovsky. Mr. Mangul gave an oral presentation on the same topic at the 8th ISCB Student Council Symposium (SCS 2012), held in Long Beach on July 13. SCS is a forum for students, post docs, and young researchers in the fields of computational biology and bioinformatics. Both ISMB and SCS are sponsored by the International Society for Computational Biology.

All three conferences received student travel funding from the National Science Foundation.

Fu Featured in *GSU Magazine*

Guoxing Fu

M.S. student Guoxing Fu was featured in the Spring 2012 issue of *GSU Magazine*. In the article "Life in the Lab: Guoxing Fu," he tells writer Jeremy Craig about his dual life as a Ph.D. student in biology and M.S. student in computer science.

As a biology student, Mr. Fu works for Regents' Professor Irene Weber. Dr. Weber's lab uses the techniques of bioinformatics, biochemistry, and crystallography to study the molecular basis of disease, with a focus on the mode of action of key regulatory proteins.

As a computer science student, Mr. Fu is learning bioinformatics under the direction of professor Robert Harrison. On April 10, Mr. Fu defended his M.S. project, "A Deterministic-Stochastic Crossover System for Simulating Biochemical Networks."

GSU Magazine is a quarterly publication distributed to alumni, donors, and other friends of the university. "Life in the Lab" is the latest in a series of profiles of GSU science students.

Computer Science Students Receive Awards

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

Outstanding Senior Award: Emmanuel Thomas
Undergraduate Research Award: Brendan Benshoof
Outstanding Service Award: Debraj De
Graduate Teaching Award: Yang Wang
Graduate Research Award: Shouling Ji
Outstanding Graduate Student Award: Marco Valero
John Deere Diversity Fellowship: Yvette Temate-Tiagueu

Emmanuel Thomas and Marco Valero received their awards at the annual Arts and Sciences Honors Night ceremony, which was held on April 18 in the Student Center.

Mangul Delivers Lectures in Moldova

In May, Ph.D. student Serghei Mangul delivered a series of public lectures on bioinformatics at the University of the Academy of Sciences of Moldova (UnASM). UnASM is located in Chisinau, the capital of Moldova.

On May 2, Mr. Mangul gave a talk on "It's a DNA World: An Introduction to Next, Next Generation Sequencing – From Semiconductor to Single Molecule." On May 3, his topic was "Mathematical and Computational Approaches in High-Throughput Genomics." On May 4, he discussed "Computational Methods for Transcriptomic Annotation and Quantification using RNA-seq."

Mr. Mangul's talks were presented at the invitation of the Laboratory of Bioinformatics at UnASM's Center of Molecular Biology. He received travel support from the Academy of Sciences grant program for Moldovan overseas graduates. Professor Alex Zelikovsky is Mr. Mangul's Ph.D. advisor.

ACM Chapter Elects New Officers

The Georgia State University student chapter of the ACM recently elected officers for the 2012–2013 academic year. The new officers are:

Chair: Nick Mancuso
Vice Chair: Haidong Xue
Secretary: Olga Glebova
Treasurer: Andrew Rosen
Program Chair: Weston Hopkins
Publicity Chair: Zhiyi Wang
Membership Chair: Corey McGann
Webmaster: Dinesh Agarwal

Students Win ICDCS Travel Grants

Ph.D. students Debraj De and Shouling Ji were each awarded a $1,000 travel grant to attend the 32nd International Conference on Distributed Computing Systems (ICDCS 2012), which was held in Macau, China, on June 18–21.

Mr. De presented the paper "FindingHuMo: Real-Time Tracking of Motion Trajectories from Anonymous Binary Sensing in Smart Environments," which was co-authored by associate professor WenZhan Song, Ph.D. student Mingsen Xu, Dr. Cheng-Liang Wang (Chongqing University), Dr. Diane Cook (Washington State University), and Dr. Xiaoming Huo (Georgia Tech).

Mr. Ji presented the paper "Optimal Distributed Data Collection for Asynchronous Cognitive Radio Networks," co-authored by adjunct assistant professor Zhipeng Cai, Ph.D. student Jing He, and associate professor Anu Bourgeois.

Mr. De works for the Sensorweb Research Laboratory, which is directed by Dr. Song. Associate professor Yingshu Li is Mr. Ji's Ph.D. advisor.

ICDCS 2012 was sponsored by the IEEE Computer Society Technical Committee on Distributed Processing. Funding for travel grants was provided by the National Science Foundation.