

# Significant BITS

Newsletter of the  
Department of Computer Science



## Ubiquitous Sensing for Social, Behavioral, and Environmental Studies

Using sensors to continuously monitor activities, health, and lifestyles of individuals has reached unprecedented levels — smartphones have a plethora of sensors to monitor activity and location, on-body sensors enable continuous sensing of our physiological signals, and a growing number of sensors embedded in the world enable monitoring of our living spaces. “Ubiquitous sensing promises to revolutionize our understanding of the social, environmental, and behavioral determinants of a wide range of human activities and health conditions,” says Associate Professor Deepak Ganesan, whose research explores novel sensor systems, algorithms, and applications.

The ability to provide a holistic view of an individual’s activities, physiology, and environment has profound implications across several disciplines. One tantalizing possibility is large-scale behavioral health studies, where thousands of participants provide data through self-reports, on-phone sensors, and off-the shelf body sensors as they proceed in their daily life. “Behavioral studies today are expensive, cumbersome, and often limited to a few dozen participants,” says Ganesan. “Most of us have never participated in a behavioral study because it is far too time-consuming. But a more affordable and scalable alternative is on the horizon.” This new model, which Ganesan refers to as “crowdsourced behavioral studies,” uses mobile phones and on-body sensors to reduce the burden of participation. Ganesan is working with researchers at the Yale Department of Psychiatry to explore these ideas in substance abuse studies — participants wear chestbands with EKG, respiration, and skin conductance sensors, together with phone-based sensing of location and activity, enabling better understanding of patterns and triggers of drug use.



Deepak Ganesan

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## Awards ceremony held to celebrate our alums and students

The department celebrated the accomplishments of this year’s Outstanding Achievement and Advocacy (OAA) Award winners along with undergraduate and graduate student award recipients during a banquet held at the Mullins Center on Friday, May 6, 2011. Over ninety people joined the celebration.

In 2009, the department initiated the OAA award program to recognize the outstanding accomplishments of graduates of the department’s degree programs and to acknowledge the support of important friends of the department.

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### News

- Clarke elected IEEE Fellow 2
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### Awards

- Kurose: Conti Fellowship 5
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2011 OAA recipients (l. to r.): Wei Zhao, John Woods, Irene Ros, A. Anthony Gee, Renu Chipalkatti, Michael Zyda, and Ronald Arkin.

## Alum Connections

**Rahul Simha** (Ph.D. '90), Computer Science Associate Professor within the School of Engineering and Applied Science at George Washington University, was selected as the 2010 U.S. Professor of the Year for the District of Columbia. Sponsored by the Council for Advancement and Support of Education (CASE) and the Carnegie Foundation for the Advancement of Teaching, the program recognizes the most outstanding undergraduate instructors in the country with four national winners and individual state winners.

**Sharad Jaiswal** (Ph.D. '05), a researcher at Alcatel-Lucent Bell Labs in Bangalore, India, was named to the MIT *Technology Review* magazine's first India TR35 list in 2010. The TR35 recognizes outstanding innovators under the age of 35 for their continuing work in India that has the highest impact locally and globally. Jaiswal was recognized for his work on projects on low-cost internet connectivity for villages (VillageNet), and scalable, low-cost distribution of rich content on mobile devices (mango).

**Bo An** (Ph.D. '11) received the IFAAMAS-10 Victor Lesser Distinguished Dissertation Award during the AA-MAS Conference held in Taiwan in May. An is currently a Postdoctoral Associate, at the University of Southern California Department of Computer Science.

**Siddharth Srivastava's** Ph.D. dissertation on the "Foundations and Applications of Generalized Planning" was selected for an Honorable Mention for the 2011 International Conference on Automated Planning (ICAPS) Best Dissertation Award. He received the award at ICAPS-11, in Freiburg, Germany in June. Srivastava (Ph.D. '10) is a Postdoctoral Research Associate at UMass Amherst Computer Science.

Co-founders **Gaurav Mathur** (M.S. '07) and Tom Moss recently sold start-up company 3LM, Inc. to Motorola. The company focuses on Android services for business. Prior to 3LM, Mathur was an Android Program Technology Manager at Google.

In January, **J. Antonio Medina** (Ph.D. '97) was promoted to Vice President at Morgan Stanley, located in New York City.

**Nilanjan Banerjee** (Ph.D. '09), received a National Science Foundation CAREER Award for his project "System Support for Renewable Energy-driven Devices." Banerjee is an Assistant Professor at the University of Arkansas Computer Science and Computer Engineering Department.

**Venkata Duvvuri** (M.S. '99) recently graduated with an M.B.A. from UC Davis. He is a term analytics consultant in the areas of business intelligence and marketing analytics within the Global Customer Database Marketing team at Apple Computer.

**Wei Zhao** (Ph.D. '86) was recognized with an honorary doctorate degree jointly conferred by 12 Portuguese universities for his achievement in educational development at the University of Macau where he is the current rector and a chaired professor.

As part of his sabbatical, **Henning Schulzrinne** (Ph.D. '92) has been working in Washington, D.C. as a Distinguished Engineering Fellow at the Federal Communications Commission (FCC). The FCC does much more than policing the airwaves for inappropriate content. For example, the FCC manages all non-governmental spectrum (radio frequency) use in the U.S., and approves all devices that can emit radio frequencies. Schulzrinne has been helping with a number of FCC projects, ranging from next-generation 9-1-1 to open Internet issues, video relay services, and "bill shock." Most recently, he is a member of a new advisory council that will help ensure that people with disabilities can make emergency calls even if they cannot hear or speak.

**Jamieson Cobleigh** (Ph.D. '07) and **Rachel Smith Cobleigh** (Ph.D. '08) are pleased to announce the birth of their daughter Eliya Marie, born on June 3, 2011.

## Nominate a fellow alum

Nominations are now being accepted for the 2012 Outstanding Achievement and Advocacy Awards. Nominations should be sent by email to Leanne Leclerc (leclerc@cs.umass.edu). The information below would be appreciated with your nomination:

- The name, title, email, phone number, and organizational affiliation of the nominee,
- The name(s), email(s), and phone number(s) of the nominator(s),
- A brief biography summarizing the nominee's career (no more than one page),
- A statement of the nominee's outstanding achievements in the award category,
- A very brief (no more than 25 word) suggested citation to be written on the OAA winner's award plaque. Details on the 2011 event can be found at [www.cs.umass.edu/oa2011](http://www.cs.umass.edu/oa2011)

## We need your support

Your gifts are invaluable in helping the department fulfill its goals of excellence in research and teaching. These gifts are important in augmenting our regular programs by promoting undergraduate and graduate research, supporting seminars by outstanding scientists, and helping new faculty establish their research programs. Those contributions that are designated for specific programs also fund activities that enrich our educational and research programs.

One of our goals is to enhance the undergraduate experience to more accurately reflect the excitement that the field of computer science offers. To meet this goal, we must provide awards and scholarships for our students, new equipment for our labs, improved classrooms, and more seminar series. In addition, donations to our CS Endowment fund will have continuing benefits to the department's graduate and undergraduate programs.

## CELEBRATED ----- continued from page 1

Department Chair Andrew Barto and Steve Goodwin, Dean of the College of Natural Sciences, welcomed the attendees and gave an overview of the department. Professor Leon J. Osterweil presented awards to the following 2011 OAA recipients:



- Outstanding Achievement in Research: **Ronald Craig Arkin** (Ph.D. '87) - Regents' Professor and Associate Dean for Research and Space Planning in the College of Computing at Georgia Institute of Technology. He is also the Director of the Mobile Robot Laboratory.



- Outstanding Achievement in Management: **Renu Chipalkatti** (M.S. '87) - Global Head, Vertical Industry Solutions: Product Management at Verizonbusiness

- Outstanding Achievement in Entrepreneurship: **A. Anthony Gee**

(B.S. '90) - co-Founder and Managing Partner of Carthage Capital Group

- Outstanding Achievement by a Young Alum: **Irene Ros** (B.S. '06) - Research Developer at the Visual Communication Lab, a group within the Collaborative User Experience group at the Center for Social Software at IBM Research; as of July: Senior Programmer at Bocoup



- Outstanding Achievement in Public Service: **John L. Woods** (Ph.D. '80) - retired in 2006 as President and General Manager of TRW's Electromagnetic Systems Laboratory

- Outstanding Achievement in Education: **Wei Zhao** (Ph.D. '86) - Rector and Chaired Professor of the University of Macau



- Outstanding Achievement in Technology Development: **Michael Zyda** (M.S. '78) - Director

of the Game Pipe Laboratory and a Professor of Engineering Practice in the Department of Computer Science at the University of Southern California



More details on the careers of the OAA award recipients, along with photos of the event, are posted at [www.cs.umass.edu/oa2011](http://www.cs.umass.edu/oa2011).



During the OAA banquet, CNS Dean Steve Goodwin and Prof. Lori Clarke presented Andrew Barto (center) with a token of appreciation for his years of service as department chair



Grad Winners (l. to r.): J. Altidor, B. Simidchieva, D. Ruiken, B. Castro da Silva, M. Salajegheh, M. Bendersky, and S. Srivastava

During the evening's celebration, current students and recent alums were also recognized. The undergraduate and graduate awards were generously sponsored by Yahoo!, a member of the Department's Industrial Affiliates Program. Professor James Allan, Graduate Program Director, presented the following Outstanding Graduate Student Awards:

- Outstanding Dissertation Award: **Michael Hay** (Ph.D. '10)
- Outstanding Dissertation Award: **Siddharth Srivastava** (Ph.D. '10)
- Outstanding Synthesis Award: **John Altidor**
- Outstanding Synthesis Award: **Michael Bendersky**
- Outstanding Synthesis Award: **Mastooreh Salajegheh**
- Outstanding Teaching Assistant Award: **Bruno Castro da Silva**
- Outstanding Teaching Assistant Award: **Dirk Ruiken**
- Outstanding Teaching Assistant Award: **Borislava I. Simidchieva**

Professor Robbie Moll, Department Associate Chair, presented the following Outstanding Undergraduate Awards to students in this year's graduating class:

- Overall Achievement in Computer Science: **Sean P. Dooley**
- Achievement in Artificial Intelligence: **Jonathan B. Leahey**
- Achievement in Networking: **Felipe Ribeiro de Mello**
- Achievement in Security: **Anthony R. Duran**
- Achievement in Software Engineering: **Ryan C. Hurley**
- Achievement in Systems: **Demetre E. Lavigne**
- Achievement in Theory: **Nicolas A. Scarrci**

The department would like to thank all those who participated in these successful events. We look forward to seeing more alums at next year's event.



Undergrad Winners (l. to r.): F. Ribeiro de Mello, A. Duran, S. Dooley, R. Hurley, N. Scarrci, D. Lavigne, and J. Leahey