

# ALUM Matters

*A newsletter for alumni of the Department of Computer Science*



## Chandra receives NSF CAREER award

The National Science Foundation awarded a Faculty Early Career Development (CAREER) award to CS alum Abhishek Chandra (Ph.D. '05) for his project "Self-Managing Resource Allocation in Unsupervised Distributed Systems."

Chandra is currently an Assistant Professor in the Department of Computer Science and Engineering at

the University of Minnesota. His research focuses on operating systems, distributed systems, and computer networking. While at UMass Amherst, Chandra was advised by Associate Professor Prashant Shenoy.

"Recent years have seen a growing deployment of distributed computing infrastructures such as Grids, Planet-Lab, @home, and peer-to-peer systems that run a variety of Web, commercial, and scientific applications. Many of these infrastructures are unsupervised. They consist of a large number of loosely-connected nodes that contribute computational and storage resources but are not centrally managed," says Chandra. "Such unsupervised infrastructures are characterized by uncertainty in their resource availability caused by failures, varying load conditions, and node churn, thus putting undue burden on application writers and system administrators for the successful deployment and execution of applications."

For Chandra's CAREER project, he is developing a self-managing resource allocation framework that would hide the infrastructure uncertainties and dynamics from applications, while transparently adapting to changing conditions within the infrastructure. As part of this framework, he is developing techniques for: (i) Predictable resource aggregation to provide resource guarantees to applications in the presence of dynamic loads and changing resource availability, (ii) Reliability-aware resource management to achieve desired levels of reliability and availability, and (iii) System inference and prediction to

enable decentralized inference of global system conditions for proactive response to dynamic infrastructure changes.

These techniques are based on cooperation and redundancy among nodes in the infrastructure to provide scalability and decentralization, adds Chandra. His research will enable effective deployment of large-scale scientific and commercial applications on resource-rich but unreliable infrastructures.

"Abhishek has branched off in an exciting research direction, where he is applying techniques for autonomous resource management to unreliable and unsupervised machines in a distributed grid environment," says Shenoy. "I expect his CAREER award, which tackles a number of difficult research problems in this area, to significantly improve the management of very large systems consisting of tens of thousands of loosely coupled machines."

In addition to his CAREER research project, Chandra is also currently involved in the RIDGE project: Reliable Service Infrastructure in Donation-based Grid Environments. The Ridge project is exploring the challenges inherent to hosting large-scale services on a donation-based open Grid. These challenges arise due to dynamic resource heterogeneity, unreliable nodes, and distributed data, Chandra explains. He and his colleagues are working to provide differentiated performance guarantees, including statistical ones, to different members of a community despite the underlying Grid uncertainty.

The NSF CAREER award is NSF's most prestigious award for new faculty members. Chandra joined the University of Minnesota in 2004. He received his M.S. and Ph.D. from UMass Amherst Computer Science and his B.Tech in Computer Science and Engineering from the Indian Institute of Technology. He received the Best Student Paper Award at the 2005 IEEE's International Conference on Autonomic Computing, and he was also nominated for an Association for Computing Machinery (ACM) Doctoral Dissertation Award. Chandra is a technical program committee member for the IEEE Conference on Computer Communications (INFOCOM 2007), the Workshop on Large-Scale and Volatile Desktop Grids (PCGrid 2007), and the International World Wide Web Conference (WWW 2007) of which Shenoy is the Program Chair.

## Alumni Connections

Two CS alums are among the newest ACM Fellows for 2006: **Alexander Wolf** (Ph.D. '85) and **Bryant York** (Ph.D. '81). The ACM Fellows program recognizes and honors outstanding ACM members for their achievements in computer science and information technology. Wolf, a Professor in the Department of Computing at Imperial College London and affiliated appointments at the University of Colorado at Boulder and the University of Lugano, Switzerland, was recognized for his research in distributed system software engineering and service to the community. York, a Professor in the Computer Science Department at Portland State University was recognized for his leadership in broadening participation in computing.

California Governor Arnold Schwarzenegger announced the appointment of **Debra Richardson** (Ph.D. '81) to the state's Broadband Task Force. The task force brings together public and private stakeholders to remove barriers to broadband access, identify opportunities for increased broadband adoption and enable the creation and deployment of new advanced communication technologies. Richardson is a Professor of Informatics and the Ted and Janice Smith Dean of the Donald Bren School of Information and Computer Sciences at the University of California, Irvine.

The Defense Advanced Research Projects Agency (DARPA) recognized **Tom Wagner** (Ph.D. '00) for his significant achievements during 2006. The award for technical innovations was presented to Wagner at DARPA's second annual awards ceremony in December. Wagner is currently a DARPA Program Manager in the Information Processing Technology Office (IPTO).

CS alums **Claire Cardie** (Ph.D. '94) and **Ellen Riloff** (Ph.D. '94) are collaborating with University of Pittsburgh Associate Professor Janyce Wiebe on a new University Affiliate Center (UAF) funded by the U.S. Department of Homeland Security. Their Center for Extraction and Summarization of Events and Opinions in Text (CERATOPS) is focused on developing accurate and robust techniques for extracting and summarizing information about events and beliefs from free text. Cardie is currently a Professor in the Department of Computer Science at Cornell University and Riloff is an Associate Professor in the School of Computing at the University of Utah.

**Steven P. Levitan** (Ph.D. '84) will serve as general chair of the Design Automation Conference (DAC), the premier educational and networking event for Electronic Design Automation (EDA) and silicon solutions, to be held in June 2007 in San Diego. Levitan is the John A. Jurenko Professor of Computer Engineering in the Department of Electrical and Computer Engineering at the University of Pittsburgh with a joint appointment in the Department of Computer Science.

**Nevio Benvenuto** (Ph.D. '83) authored a new book that outlines the fundamental theory of communication systems. The book, *Communication Systems: Fundamentals and Design Methods*, is published by Wiley Publishing. Benvenuto is currently a professor in electrical engineering at the University of Padova, Italy. Co-authors include Roberto Corvaja, Tomaso Erseghe, and Nicola Laurenti.

## Homecoming 2007 Celebrate the Ph.D. program's 35th anniversary

Help us celebrate the 35th Anniversary of the department's Ph.D. program during Homecoming 2007 which will be held on Friday, October 19, 2007. More details will be posted at [www.cs.umass.edu/homecoming2007](http://www.cs.umass.edu/homecoming2007).

## New challenge for Cornell

**Matthew Cornell**, a CS alum (M.S. '92) and department employee for a dozen years, recently left UMass Amherst to pursue a career as a personal productivity workflow consultant.



After reading "*Getting Things Done*" by David Allen (given to him by his boss, Associate Professor David Jensen, Director of the Knowledge Discovery Laboratory), Cornell was surprised by his experience of adopting the ideas. He then dedicated himself to becoming a student of time management ideas, and he started teaching the methodology to others. Encouraged by the feedback, he now runs workshops and one-on-one coaching at client desk-sides.

Cornell says his clients are "smart, sophisticated workers" who are overloaded with information, communications, and commitments, yet know that they can work much more effectively with less stress. He teaches clients concepts that enable them to stay on top of everything in their work and lives. The surprise, he says, is that this often frees his clients' minds to address the bigger issues, such as focusing on where their research or business should be heading, seeing what new opportunities are ahead, and generally applying their talents and intellects more fully.

He continues to consult on campus, with recent clients including those in Administration and Finance, The Center for Collaborative Adaptive Sensing of the Atmosphere, and the Office of Faculty Development, with whom he is creating a productivity program for pre-tenure faculty. He is also the author of "IdeaMatt" ([ideamatt.blogspot.com](http://ideamatt.blogspot.com)), a popular blog on personal productivity. His web site is [matthewcornell.org](http://matthewcornell.org).

## We need your continued support

Gifts like yours help the department in many ways, such as funding departmental seminars by outstanding scientists, assisting undergraduate research and helping new faculty establish their research programs. In addition to contributions ear-marked for a specific purpose, general support helps make it possible for us to continue activities that enrich our educational and research programs.

A current need within the department is to upgrade the equipment in our instructional education lab and PC lab with new computers. Also, donations to our CS Endowment fund will have continuing benefits to the department's

graduate and undergraduate programs.

Visit [www.cs.umass.edu/csinfo/donate.html](http://www.cs.umass.edu/csinfo/donate.html) for online donations. If you would like to mail a donation directly to the Department of Computer Science, please make checks payable to "UMass Amherst Computer Science" and mail to: Jean Joyce, External Relations, UMass Amherst, Department of Computer Science, 140 Governors Drive, Amherst, MA 01003-9264. To have a postage paid donation envelope sent to you, send email to [alumni@cs.umass.edu](mailto:alumni@cs.umass.edu). Thank you for your support of the department.

### Computer Science Alums --- what's new with you?

Please take a few minutes to update your information so that we'll have the correct details when sending out (U.S. mail and email) our newsletter and invitations to our Computer Science events. You can send the details directly to [alumni@cs.umass.edu](mailto:alumni@cs.umass.edu) or mail them to Jean Joyce, External Relations, UMass Amherst, Department of Computer Science, 140 Governors Drive, Amherst, MA 01003-9264.

Additionally, please send us any updates on your career, education, awards, research, personal life, or anything else that is new since leaving UMass Amherst. Let us know if we can include your news in our newsletter.

For more information on our alums, go to [www.cs.umass.edu/csinfo/alumni](http://www.cs.umass.edu/csinfo/alumni).

#### Your information

Name: \_\_\_\_\_

Degree received: BS MS Ph.D. Year received degree(s): \_\_\_\_\_

Home address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email address: \_\_\_\_\_

#### Work information

Title: \_\_\_\_\_

Employer: \_\_\_\_\_

Work Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax number: \_\_\_\_\_

Email address: \_\_\_\_\_

URL: \_\_\_\_\_

Comments: We're interested in hearing what you've been doing since you left UMass Amherst.

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Is it ok to publish your news in the Computer Science newsletter: Yes No

Thank you for taking the time to complete this form.