

Fall 2002

multicast

UNIVERSITY OF ROCHESTER **COMPUTER SCIENCE DEPARTMENT** NEWSLETTER***In this Issue:******Faculty:****Page 2-3****Research:****Page 1, 4-5****Graduates:****Page 5-7****Undergrads:****Page 8-11*

URCS Acquires Major New Parallel Computing Infrastructure

URCS entered a new era in parallel computing this year, with major support from the IBM Corporation. In June the department took delivery of a 32-processor IBM pSeries 690 "Regatta" multiprocessor. Powered by IBM's groundbreaking new 1.3GHz dual-processor Power-4 chips, the machine sustains a whopping 56 gigaflops on the Linpack TPP benchmark. Innovative packaging squeezes all 32 processors onto a single motherboard, with 128MB of L3 cache and 32GB of cache-coherent memory. Also delivered this summer was a 32-processor IBM-branded Linux cluster, powered by 1.3GHz Pentium III processors. Seed money for the new machines came from the department's NSF Research Infrastructure award (see cover article in last year's *Multicast*) and from a joint CS/ECE DARPA contract in low-power processor design. These were augmented by substantial price discounts and a \$1.2 million gift from IBM, under its Shared University Research (SUR) program. To adequately house the new machines (power, space, and cooling), the University is funding extensive renovations of URCS lab space.

SUR awards are designed to promote research and collaboration in areas of interest to both the University and IBM. The URCS award was sponsored within the corporation by the LPX processor design group and the K42 operating systems group, both at IBM's T.J. Watson Research Center. The LPX group, led by Phil Emma and Pradip Bose, in cooperation

with Balaram Sinharoy of Advanced Processor Design, is working with Rochester's Complexity Adaptive Processing (CAP) group (Dave Albonesei, Sandhya Dwarkadas, Eby Friedman, Michael Scott, Chen Ding, and Wendi Heinzelman) on mechanisms that save energy by dynamically varying processor design parameters to meet the needs of the currently running application. Work on CAP/LPX requires enormous amounts of simulation time, for which the Regatta machine and Linux cluster are ideally suited. The K42 group, led by Orran Krieger and also including URCS alum Bob Wisniewski, is building a Linux-compatible operating system for high-end multiprocessors such as the Regatta. Among other things, the K42 group is working with URCS on issues in scalable synchronization (Michael Scott, PI).

Other major projects using the new machines include algorithm design for parallel computing, compiler mechanisms to optimize use of the memory hierarchy, shared memory emulation in clustered and distributed systems (the Cashmere and InterWeave projects), and resource management and scheduling. Much of the work in parallel algorithms is occurring in collaboration with the University's Laboratory for Laser Energetics, where Sandhya Dwarkadas and Michael Scott have secondary appointments. This spring the Laser Lab took delivery of four additional 16-processor Regatta machines.

The new machines in CS represent the department's fourth major generation of parallel computing hardware, beginning with the 128-processor BBN Butterfly Parallel Processor in 1984, and continuing with machines from SGI and Digital/Compaq.

Faculty News

Mitsu Ogihara has been promoted to professor.

Liudvikas Bukys has been appointed Research Scientist in Computer Science.

Best Paper Award at ICPP 2002 for "Multi-level Shared State for Distributed Systems" by D. Chen, C. Tang, X. Chen, **S. Dwarkadas**, and **M.L. Scott**.

Mitsu Ogihara is on the following program committees: Third International Conference on Unconventional Model of Computation (UMC) 2002; Sixth International Conference on Business Information Systems (BIS) 2003; and on the organizing committee for the National Academy of Engineering Frontiers of Engineering (FOE) 2003.

Michael Scott has been appointed General Chair for SOSP 2003.

Dave Albonesi has received an IBM Faculty Partnership Award for the second year in a row.

Henry Kyburg was made a fellow of AAAI (See article on page 3).

A patent issued in 1/2002 (Apparatus and Method for Maintaining Data Coherence within a Cluster of Symmetric Multiprocessors) was awarded to **Sandhya Dwarkadas, Michael Scott** & former graduate students Leonidas Kontothanassis, Robert Stets, Nikolaos Hardavellas & Galen Hunt.

Sandhya Dwarkadas is Associate Editor for IEEE Transactions on Parallel and Distributed Systems, 2000-2003.

Lane Hemasandra is on the program committee for the Fourth International Conference on Discrete Mathematics and Theoretical Computer Science, which will be held in Dijon, France, July 2003.

Sandhya Dwarkadas is on the following program committees: Symposium on High Performance Computer Architecture (HPCA), 2003; International Conference on Parallel Architectures and Compilation Techniques (PACT) 2002; International Conference on Parallel Processing (ICPP) 2002.

New Grants Awarded

Ted Pawlicki has received an NSF SURF Summer Undergraduate Research Program award from the National Institute of Standards and Technology.

Randal Nelson was awarded an NSF/REU supplemental grant for the CISE Research Infrastructure entitled Spatial Intelligence for Computer-Enhanced Interaction in Physical Environments.

Len Schubert received an NSF/REU/ITR grant for Mining Text for General World Knowledge.

Michael Scott received an NSF grant for High Performance Synchronization for User Level Applications.

Sandhya Dwarkadas received an NSF/ITR grant for Dynamically Tunable Clustered Multi-threaded

Architectures.

Randal Nelson was awarded an NSF grant for Distributed Architecture for a Voluable Intelligent Environment. Co-PIs on the grant are Sandhya Dwarkadas & George Ferguson.

Dana Ballard's grant has been renewed by NIH for A Resource for the Study of Neural Models of Behavior.

Mitsu Ogihara received a KECK/NSF ITR grant for A Twin Framework to Analyze, Model, and Design Robust, Complex Networks Using Biological & Computational Principles.

Chris Brown has been awarded the NYSTAR/Kodak grant for Scene Classification of Consumer Images.

Michael Scott received a Sun Microsystems grant for Scalable Synchronization for the JAVA Virtual Machines Project.

Chen Ding was awarded DOE Career honors for Dynamic Scheduling and Fusion of Irregular Computation.

Sun Microsystems has given the department a \$60,000 server (specifically, a 4processor Sun Fire V880) and an additional \$60,000 in research funds to support work on scalable synchronization algorithms. The server will be available not only to people here, but to researchers at several other schools who are also collaborating with the scalable synchronization group at Sun Labs, Boston.

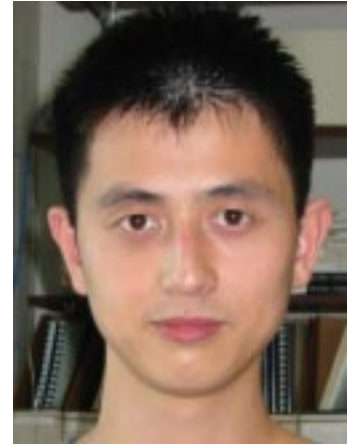
Kai Shen Joins URCS Faculty

Kai Shen joined the department faculty in August 2002, after completing his Ph.D. at University of California at Santa Barbara. His research interests are diverse though they generally fall into the area of parallel and distributed systems. Most recently, he has been working on building cluster-based infrastructure for scalable Internet services.

With the increasing deployment of large-scale complex server clusters, providing highly scalable, available and easy-to-manage service infrastructure is urgently needed. As a graduate student, Kai developed a middleware system called Neptune that supports service clustering, load balancing, resource management, and service replication for scalable Internet services. Neptune has been successfully deployed at search engine Ask Jeeves (<http://www.ask.com>) since December 2001. Prior to this work, he worked on message-passing parallel systems and high-performance computing for scientific applications. A sparse linear system solver he developed with others has been packaged by Sun Microsystems and released as part of Sun HPC ClusterTools 4 Software.

At the U of R, Kai is very excited about the potential of collaborating with the other CS research groups with his expertise in systems and high-performance computing. In addition to research, he is also very enthusiastic about the upcoming teaching experience.

Other than spending most of his time in front of computers, Kai is interested in various sports including swimming, racquetball, volleyball, and hiking, albeit all at the novice level. He planned to learn to surf on the Santa Barbara coast, but changed his mind when he realized he would be moving to upstate New York.



Kyburg named AAAI Fellow

Henry Kyburg Jr. has been elected a fellow of the American Association for Artificial Intelligence.



This prestigious honor has been awarded to him for his significant contributions to the field of artificial intelligence and unusual distinction in the profession. Kyburg, the Burbank Professor of Moral and Intellectual Philosophy as well as Professor of Computer Science at UR, also holds an appointment as a research scientist in artificial intelligence at the Institute for Human and Machine Cognition.

Throughout his academic career, Henry has been committed to interdisciplinary study, as demonstrated by his many years on the Cognitive Science Steering Committee. His work in uncertain inference—the human process of reaching conclusions—and data mining, by which computers search for information and draw conclusions, falls at the intersection between computation and logic. Many of his

advisees, both grad and undergrad, have had cross-discipline interests as well.

Kyburg has authored over 160 articles on topics ranging from inductive logic, statistical reasoning and probability to epistemology and knowledge representation. He is co-author of *Uncertain Inference*, published in August 2001, and co-editor of *Probability is the Very Guide of Life*, which will be published later this year.

A gentleman farmer, Henry admits to some of his most productive intellectual work while plowing a field or working outside. He has been known to roller blade in Genesee Valley Park with a couple of dogs in tow, and for years has been one of the fiercest competitors on the department's hockey team.

Join us for Meliora Weekend! October 11-13, 2002
For more info: <http://www.rochester.edu/alumni/meliora2002>

Center for Future Health

Over the past few years, a number of CS faculty members and their students have been involved in the creation of a new Center for Future Health. Located in the University's Medical Center, and affiliated with Strong Memorial Hospital, the Center is a multidisciplinary research facility dedicated to the creation of an integrated system of affordable, easy to use, intelligent health care tools for use by consumers in their homes. A key element of the Center is its Smart Medical Home—a fully-equipped apartment in the heart of the Med Center, with facilities for observation and experimentation. Projects sponsored by the Center range from “smart bandages” developed by biochemistry researchers, to social science studies of the use of technology in third-world villages, to various computer-based perception and reasoning systems, to list just a few research areas. This article provides a very brief introduction to the Computer Science projects going on at the Center. For more information, please visit “<http://www.futurehealth.rochester.edu>”.



George Ferguson with Personal Medication Advisor

Networking and Middleware

Prof. Amy Murphy (CS) and Prof. Wendi Heinzelman (CS/ECE) are developing a network architecture and middleware to support the seamless integration of the myriad sensors and effectors that will populate the Smart Medical Home. The network architecture and computing infrastructure must allow nodes to automatically enter and leave the network, allowing constant reconfigurations. Applications will be able to make the most efficient use of the resources currently available, considering the cost of computation as well as data transmission. The group will be developing a bridge between the raw hardware capabilities and the high-level

applications, focusing both on the network-level protocols to enable communication among the devices and on the middleware-level abstractions to facilitate efficient application development.

Vision for Memory Assistance

Prof. Randal Nelson (CS) and his students have implemented a prototype memory assistant tool that employs machine vision technology to help people with slight to moderate memory loss keep track of important objects (phone, glasses, etc.) placed around their home. Four pan-tilt-zoom cameras continuously monitor specific locations in the home. The system detects changes due to activity, zooms in to try and identify objects that have appeared in the scene, and stores the results in an episodic memory. The user queries the location of the objects using a touchscreen with a pictorial interface, and the system replies in spoken natural language. This demo system, though currently fairly simple and limited in its perceptual capacity, nevertheless contains versions of many of the components that would be present in a more sophisticated system.

Personal Medication Advisor

Prof. James Allen (CS) and Dr. George Ferguson (CS) and their students have developed the first prototype version of a conversational assistant that helps patients manage their medications. It turns out that prescription compliance is a huge and growing problem. The New York Times has called it the world's “other drug problem.” The medication advisor interacts with people using spoken natural language to answer the questions about when and how to take their pills. The initial prototype is quite limited, both in terms of the range of language that it can understand, and in terms of what it knows about drugs. The goal for the next phase of the project is to improve the robustness of the language understanding, while improving some aspects of the system's reasoning (specifically when to take the drugs), while reducing coverage in other areas, such as drug interactions. The project supports research into a wide range of issues in speech and language understanding, intention recognition, intelligent decision support, and multi-modal human-computer interaction.

Theory Update

The year 2002 will see the appearance of two new books by members of our theory group. ***The Complexity Theory Companion*** by Lane Hemaspaandra and Mitsu Ogihara came out at the start of the year, and ***Theory of Semi-Feasible Algorithms*** by Lane Hemaspaandra and Leen Torenvliet of University of Amsterdam will appear this fall. Both are published by Springer-Verlag. Lane and Mitsu,

with Jin-Yi Cai and V. Chakaravarthy of University of Wisconsin, also have strengthened “Yap's Theorem”—a central tool yielding consequences from a nonuniform containment of NP.

Jointly with Till Tantau of Technical University of Berlin and Proshanto Mukherji of UR, Lane (continued, Page 5)

Grad Alumnus has Global Impact



Daniel Sabbah '82

This is our first Featured Graduate Alumni article. Please let us know if you have any suggestions for future editions.

Daniel Sabbah received his Ph.D. in 1982, in the pioneer days of URCS. His thesis in neural computation was the first UR thesis in this now well-established field, and he was able to use a classical problem in computer

vision to show how the new methodology gave insights into how the brain might do visual computation.

His 20-year career, which started at IBM's T. J. Watson Research Center, has allowed him to grow and change within IBM's corporate structure. From his early days in the AI group he formed to study parallel algorithms for computer vision, he continued his AI career with projects in pattern recognition, problem solving, robotics and natural language understanding. He stayed within IBM Research until 1993, when he left research to become CTO of the product division for application development tools and languages. Currently, Danny heads the worldwide development of IBM's middleware project called Websphere, supervising over 5500 employees on several continents. Jerry Feldman, Danny's advisor at UR, said "What marked his graduate career was the unusual combination of a willingness to take risks with a strong drive to see projects through to completion." These skills have served him well at IBM.

It's the 'sink or swim' mindset of the early days of the department that Danny credits with his resourcefulness today. Our first-year students all took a course called "Immigration" (now CSC 400). During the mid 70s, many undergraduate programs were lacking computer science curricula, and all graduate students needed a course in the basic skills to level the playing field within the first-

year class. Each assignment built exponentially on the previous one, until the assignments were immense. He recounts a particularly grueling, sleepless 4-day series of first-year exams and programming assignments, after which he and his soon-to-be bride went to dinner. He fell asleep face down in his soup in the restaurant, but passed his quals!

Sabbah's son Zach entered UR this fall as a freshman. UR was the top choice for Zach because of his dad's positive experience while in school here. The solid

"What marked his graduate career was the unusual combination of a willingness to take risks with a strong drive to see projects through to completion."

---Jerry Feldman

education and grounding that Danny received at UR, both grad and undergrad (class of '74), the size of the student body and campus, and the access for undergrads to top-notch senior faculty and research made the UR choice easy. Though Zach isn't sure yet what he'll major in, the family feels his varied interests can be explored at UR and Eastman.

Though a grueling travel schedule keeps Danny quite busy, he still finds time to run and lift weights to stay in shape. He never gets very far from a computer terminal, as even his hobbies involve some aspect of computing. He enjoys building his own computers and networks at home, tries all kinds of software, and plays strategy and D & D games. His two teen-aged children, Zach and Emily, also keep him busy. He'll be a more frequent visitor to Rochester for the next four years, until son Zach graduates in 2006. We'll look forward to those visits, Danny!

(Theory Update from Page 4)

recently showed that overhead-free Turing computation can accept all meta-linear languages. And Lane and URCS student Mayur Thakur have recently established an improved complexity-theoretic analog of Rice's Theorem. Lane and Edith Hemaspaandra's study of computational politics continues jointly with many collaborators, including Holger Spakowski of University of Düsseldorf, who will be visiting URCS for a year.

Joel Seiferas studied the "multitonic" version of Batcher's bitonic sort and obtained a simple depth- $O((\log k)(\log n))$ construction for k -tonic sequences of length n .

Jointly with UR students Rahul Bijlani and Yin-He Cheng and with UR Medical School professors Andrew Brooks

and David Pearce, Mitsu Ogihara developed a method for classifying gene expression data. Jointly with Anne Condon of U. British Columbia Mitsu edited ***Special Issue on Seventh International Meeting on DNA-Based Computers*** for *Theory of Computing Systems*. With Dick Lipton and Zeke Zalcstein of Georgia Institute of Technology, Mitsu studied the problem of square-rooting time functions of Turing machines. Tao Li, Shenghuo Zhu and Mitsu Ogihara studied the problems of estimating joint distributions and of clustering data in spaces of very high dimension. Mitsu and Till Tantau studied hardness of logarithmic-space selective sets for classes below NP. Mitsu and UR student Alina Beygelzimer studied the complexity of enumerating candidates for the rank of a matrix.

Addanki, Sanjaya (Ph.D. '84)—is now in London working for Omnibus Systems, and can be reached at sanjaya.addanki@omnibus.co.uk.

Carceroni, Rodrigo (Ph.D. '01)—"I'm now an Assistant Professor at Universidade Federal de Minas Gerais, Brazil. Other news: I increased my child count by one: in addition to Laura, 2, I and Hellen now have Julia, 5 months. We're all doing great."

Core, Mark (Ph.D.'00)—I'm a Post-doc at the School of Cognitive Science at the University of Edinburgh.

Ciaraldi, Mike (M.S. '90)—"I'm still teaching CS at Worcester Polytech. My trip to the World Trade Center with five of my students, planned for the morning of September 11, 2001, was postponed at the last minute. In April, my first play was produced during the WPI annual theatre festival. A romantic comedy called "First Date" was one of 13 selected by the jury and performed."

Coombs, Dave (Ph.D., '92)— writes that he and Melissa have returned to the Washington DC metro area. Dave is working at SAIC, primarily on UAV-related technology

Graduate Alumni News & Notes

(e.g., <http://www.saic.com/products/aviation/vigilante/vig.html> and SATCOM UAV data link system <http://www.saic.com/products/aviation/dde/dde.html>), but also pursuing other applications of computer vision and intelligent systems (security, face recognition, etc.). Melissa will be teaching voice lessons on the faculty of Frederick Community College in MD in addition to singing and maintaining her private teaching studio.

Cooper, Paul (Ph.D. '89) The company founded by Paul Cooper, Perceptual Robotics, was acquired by divine, inc. in February. (Unfortunately, Paul did not become a millionaire.) His new email address is paul.cooper@divine.com.

DeSa, Virginia (Ph.D.'94) "I'm currently an Assistant Professor at UCSD in Cognitive Science. I was married last September to Cooper Roddey, a neuroscientist, who I met at UCSF. Dana Ballard, Jack Veenstra, Lawrence Crowl & Cesar Quiroz attended the wedding."

Dubnicki, Cezary (Ph.D., '93) has left StorageNetworks and is back at NEC Research Institute in Princeton as of September. His email wasn't available at press time, but it will be available on the alumni website.

Feist, Steven (M.S., '88) is working as a research associate at Carnegie Mellon University. He and Michele have a daughter Lillian, born in September of 1998, and a son Joshua, born last December.

Jain, Sanjay (Ph.D.'91)—"The news from here is that I had twin girls last year (Krati and Urvi Jain). They are now 16 months old." Sanjay is currently at the National University of Singapore.

Light, Marc (Ph.D. '96) has taken an assistant professorship at the University of Iowa. It is a joint position in the Linguistics Dept. and the School of Library and Information Sciences. His new email address will be marc-light@uiowa.edu.

Litman, Diane (Ph.D. '86) - "After many years in New Jersey at AT&T and Rutgers, Diane & **Mark Kahrs (Ph.D. '84)** joined the Univ. of Pittsburgh in Fall 2001. Mark is in the Electrical Engineering Dept. and Diane has a joint appointment in Computer Science and the Learning Research and Development Center. Diane was re-elected in 2002 for a second 2 year term as Chair of the North American Chapter of the Association for Computational Linguistics.

Loui, Ron (Ph.D., '88) writes from Washington University in St. Louis that he's had a patent; that he hosted the SEP meeting this year (exact philosophy) and ran an AI and LAW conference last year (ICAIL, St. Louis), for which he received some press; that he's still doing photography and some sculpting; and that he's working on "questions that mean a lot to me: a formal model of procedural fairness, nonstandard mathematical models for negotiation, a new decision theory that places value on norm-following, and a philosophical view of computing that extends to control systems and games."

Marchetti, Michael (M.S. '95) is working at Xerox in Webster, NY. In April 2001, he married a UR alum & current doctoral student in educational administration.

Markatos, Evangelos (Ph.D.' 93) has been named Associate Professor of Computer Science at the University of Crete.

Marsh, Brian (Ph.D. '92)—"I am currently a man of leisure, taking some time off. Best contact info for me is bmarsh@acm.org."

McCallum, Andrew (Ph.D. '96)—"I've joined the faculty at UMass Amherst, and I'm working on machine learning, statistical language modeling, information extraction (mostly from the web), and data mining. I'm planning on spreading the Go-playing tradition to UMass. I'm planning on visiting U of R to give a talk sometime this fall, perhaps close to Thanksgiving. Donna and I have two happy and healthy boys (3 years old and 9 months old)."

Meira, Wagner (Ph.D. '97) became associate professor of Computer Science at Universidade Federal de Minas Gerais, Brazil. Also, Wagner published a book about the design and implementation of e-commerce systems. It's in Portuguese, but an English version is in the works. On the homefront, his first son, Gabriel, was born October, 2001.

Miller, Brad (M.S. '86) and Chung Hee Hwang (Post-Doc) — have recently moved to metro Phoenix, AZ and are ensconced in Motorola's Intelligent Systems lab. There they are working on the "Driver Advocate"—a research system to monitor driver distraction and enhance driver capabilities to engage in secondary tasks while remaining aware and in control of the primary driving tasks. Brad says, "I think we're the only AI project inside Motorola Labs, so that's both exciting and nerve wracking as well.."

Russell, Dan (Ph.D. '85) - "I run the User Sciences & Experience Research (USER) Lab at IBM Almaden Research Center. It's an HCI/UI kind of place that studies the cognition, design and use of all kinds of user interfaces. See <http://www.almaden.ibm.com/cs/user/npuc/> for a workshop I held in July."

Sabbah, Daniel (Ph.D. '82)—"My son is starting undergrad

Meet our recent Ph.D.s

Donna K. Byron (James Allen, advisor)
"Resolving Pronominal Reference to Abstract Entities"
 Donna has joined the Computer Science Faculty at
 The Ohio State University

Gregory R. Wheeler (Henry Kyburg, advisor)
"Nonmonotonicity and Paraconsistency"
 Interdepartmental degree in Philosophy and Computer Science
 Greg will be a Post Doc in Machine Learning and Uncertain Reasoning at the
 Department of Informatics
 Center for Research in Artificial Intelligence, New University of Libson, Portugal

school at UofR in September. Professionally, I'm in charge of IBM's internet and business integration development software (multiple billions in revenue and 6000 developers – growing tens of percents per year). It goes under the name of Websphere." (See article, Page 5.)

Sanyal, Tamisra (M.S. '81) is now an Assistant Professor at the University of Cincinnati's Department of Math, Physics, and Computing Technology. His email address is tamisra.sanyal@uc.edu.

Selfridge, Peter (Ph.D. '82) After 19 years at AT&T and a brief stint with a startup, Peter is now working at Schrodinger, a software company in Manhattan, doing molecular modeling for drug design. He can be reached at selfridge@schrodinger.com.

Shapiro, Jonathan (Ph.D. '80) has left his computing job due to disability (loss of vision), but has joined the Board of Directors of the Naturist Action Committee (<http://www.naturistsociety.com/NAC>).

Smith, Ed (Ph.D. '82) "These days I'm happily unemployed, work for no-one, have no-one working for me, code web pages part-time for a friend's marketing agency, live on a hill with a view a short distance from downtown Portland. I continue to write and act."

Stets, Rob (Ph.D. '99) "Things are ok here, although my company was recently bought out. Fortunately, my job (Hewlett Packard Company) looks to be reasonably stable."

Vallino, Jim (Ph.D. '98) "I got tenure and a promotion to Associate Professor at RIT. Also, I switched to full-time in the Department of Software Engineering."

Van Wie, Mike (Ph.D. '01) has returned to Rochester and joined the faculty at RIT. He's also pursuing his writing, and is sharing studio space with a couple of local authors.

Vyskoc, Josef (M.S. '92) received his Ph.D. in management from the School of Management, Comenius University, Bratislava, Slovak Republic in 2001. He is

co-owner of the VaF Company (<http://www.vaf.sk/>), an information security firm.

Williams, Graeme (Ph.D. '80) is currently unemployed (and spending some time cooking at a Salvation Army soup kitchen!). His first-born, Sarah, is starting at Johns Hopkins this Fall, majoring in biology.

Yamauchi, Brian (M.S. '90) is currently leading the Bloodhound project at iRobot Corporation. Bloodhound is a semi-autonomous robot designed to deliver medical aid to wounded soldiers on the battlefield. Bloodhound is funded by a contract from the U.S. Army's Telemedicine and Advanced Technology Research Center.

Zaki, Mohammed (Ph.D. '98) - "I recently got married (to Syeda Amina) on May 17th, 2002. I was awarded the NSF CAREER Award last year. I'll shortly be receiving a DOE Early Career Award as well."

Please consider the
 Department of Computer
 Science and UR in your
 giving plans. For
 information on how to
 make a gift, please contact
 the
 University's Gift Office at
 716-275-8602 or
giftoffice@admin.rochester.edu

To locate graduate alumni go to: www.cs.rochester.edu/users/#alumni/

Undergraduate News

First URCS B.S. Gets Ph.D.

Darrell Anderson graduated from UR in the first official undergraduate graduating class from the Computer Science Department in 1996. He was the first student to receive a B.S. (the luck of the alphabet!) and now has completed his Ph.D. from Duke this summer. He has the honor of being the first URCS official undergrad to receive a doctorate. He remembers his academic career at UR & Duke in his essay:

On my desk I keep an old, white ceramic coffee mug with a scratched and fading Meliora logo. I bought it in the spring of 1996 during my senior year, and the year that the University of Rochester officially recognized the Computer Science degree. I credit many of the URCS folks, in particular Michael Scott and then BCS grad student Jeff Pelz, for keeping me busy enough to get a lot of use from that mug, and for cultivating my interests to the point that I'd pursue them into graduate school.

After Rochester, I brought my coffee mug to Duke University in sunny

Durham, North Carolina. Here it has been a vessel for about a kilogram of caffeine over the course of my Ph.D. program. I should wash it before I hit the 2 kg mark.

I've been working with Jeff Chase on my dissertation "Virtualized Network Storage." I could describe it in detail, but just in case you don't have drops handy for when your eyes glaze over, I'll just say the basic idea is to distribute a single-server network file system (Sun's NFS) across an ensemble of machines by rewriting and redirecting packets at the network level. This approach maintains compatibility with standard clients by preserving the appearance and failure semantics of a single server, but with vastly superior scaling properties.

While academics demand a great deal, it's good to remember the world beyond the one we make for ourselves.

When not staring at a screen I've been leading rock climbing trips for Duke Athletics, as well as pursuing the hobby on my own time with friends. To date I've participated in over a hundred trips across half a dozen states and three countries.

This fall my last student ID will expire and I'll take my coffee mug to Mountain View, California where I am joining Google. At Duke I work with distributed systems comprising some tens of machines. Google uses 25,000 to host their service. I'm looking forward to the new playground.



For more information about undergraduate study go to : <http://www.csug.rochester.edu>

Kudos to our recent graduates!

Rahul Bijlani
Ingrid Brill
William Buckley
Nathanael Chambers
Candy Chan
Lewis Chang
Guang Chen
Andrew Choi
Justin Dagen-Lubich
Jeremy Dahlgren
Louis Deaett

Alysse DeFranco
Zebulon Forney
Brendan Heavey
Beom Jin Kim
Andrew Kwon
Yanjun Li
Steven Marx
Michael Mincieli
Kaori Oi
Nicholas Piscopo
Bryan Redick

Donald Reiman
Eric Reynolds
Jennifer Rogers
David Sankel
Ruchin Shah
Shumon Sharif
Jonathan Tam
Marcin Truszkowski
Stanislav Zlotnikov
Aaron Zschau

Robot Team Victorious at AAAI-2002

When then freshman Jonathan Schmid arrived on campus during the fall of '99, he was a trombone performance major at Eastman, with an interest in computer science. It didn't take long for the enthusiastic Jon to decide that learning to program a computer was more fun than learning to tune a piano. His interest in robotics carried over from his high school robotics competitions, and he was anxious to find a way to continue honing his skills. Jon spent the summer after his freshman year working with Chris Brown to identify the most suitable robot for the upcoming Mobile Robotics class and became Chris's go-to guy for the semester. Jon set his sights on attending AAAI-2001 to check out the robotics event and see what the competition at the conference was like. He returned from AAAI-2001 with a determination to form a team to compete and win at AAAI-2002.

In fall 2001, 8 CSC students and 3 engineering students began to assemble Mabel, the Mobile Table, to compete in the Robot Host event, Hors D'oeuvres, Anyone? The assigned task was to serve hors d'oeuvres to a room full of people. Working to create a human interaction agent on a mobile robotic platform, the team divided the task of making



Road Rules, CS Style! Edmonton Bound - to AAAI! From left to right: (front) Eric Meisner '03, Jenine Turner '03, Tori Sweetser '03, Jon Schmid '03, and Ben Atwood '03. Back: Tom Kollar '04. Missing from the picture: Dave Feil-Seifer '03 (stuck in an elevator in the dorm!) and Mike Isman '04.

an optimal robot into Conversational Speech Interaction, Active Vision, and Autonomous Navigational Control.

After 15 months of hard work by an amoeba-like list of undergraduates, the team and Mabel began their 2300-mile road trip to AAAI in Edmonton, Alberta in Jon's van. Thanks to endless hours of planning by business manager Dave Feil-Seifer, the group's funding for housing and travel, the customs paperwork and numerous other details were handled with a new appreciation for red tape. Once in Edmonton, the competition was not without its problems, with system crashes, wireless network confusion and ambient noise issues. Final system tweaking required a bit of lost sleep while in Edmonton (what would a CSC project be without some lost sleep?). All the hard work paid off when Mabel, the Mobile Table was selected as the winner of the Robot Host Event. One of the conference organizers was quoted as having said that the UR team was the best team to ever enter this event!

Dave Feil-Seifer recently told a prospective undergrad and his family that the reason he chose Rochester to do his undergraduate work (though he was accepted at another highly ranked CSC program in PA) was the opportunity for independent study and the ability to do research as an undergraduate. He felt the department's financial and academic support for the Robot Research Team may have been unattainable at another institution. With Jon Schmid's vision, and the teamwork & initiative of 16 students, not only did Mabel the Mobile Table make the trip, but she's come back with the gold! **For more information about Robot Research, go to <http://www.csug.rochester.edu/ug.research/robot.team.html>.**



Mabel converses with willing subject, major Matt Tong '03, during demo & reception following the AAAI-2002 victory.

Undergraduate Alumni News

Anderson, Darrell '96 Darrell completed his Ph.D. in Computer Science at Duke this summer, and now is at Google. (See article, Page 6.)

Arora, Tarun '00 – “I started working with Citibank last November.”

Barnett, Elliot '97 – “We are expecting our second child, a baby girl, on Oct. 6th. I have been promoted to the next level engineer at Sun, and I'm working on two patents, both for web based or software based applications.”

Berlin, Daniel '01 interned this summer with the Center for Democracy & Technology in D.C., and has transferred to George Washington Univ. School of Law for his final two years. He will be studying Intellectual Property Law.

Bodek, Haim '95 Haim and wife Elizabeth are parents of their first child, a son, Yakov Bonheim Bodek. He recently resigned from Goldman Sachs to join a startup software company called Sixfold Technologies. It will develop software for Linux Clusters. Check out the website at www.sixfold.com.

Brill, Ingrid '02 has been hired as an Associate Software Engineer by Orbital Sciences Corporation as a contractor at NASA-Goddard Space Flight Center, in the Flight software group. She will be testing the software for 2 satellites, Aqua & Aura.

Buckley, Bill '02 – “I'm starting a job in hardware design and low level hardware programming at EMC (Boston) this month. Other than that, life is pretty quiet.”

Chang, Lewis '02 – “I am now working at EMC in Boston, MA as a software engineer.”

Dagen-Lubich, Justin '02 is working as the Systems Administrator for Netsville, Inc. in Rochester.

Denny-Brown, Derek '96 – “Still happily unmarried and childless. Still Microsoft employed.”

Gerega, Aaron '99 – “I have recently been promoted to Senior Software Engineer (still at Lockheed Martin, Syracuse). I also received my SCUBA open water certification & look forward to doing some underwater exploration in my free time. Barring personal injury, I should be an Adirondack 46er (climbed all the high peaks of the Adirondacks) sometime in the very near future.”

Hamilton, Jeff '01 – “I'm still living in Santa Clara, CA and working for PalmSource Inc. as a software engineer in the Core OS department. I was one of the 50 people Palm “bought” from BeOS last year during the corporate switch.”

Hill, Brandeis '00 – “I spent the summer in San Jose, CA working at IBM in the Advanced Database Solutions Department. This past school year, I am

happy to say that I passed my doctoral qualifying exams that I was studying for since last summer.” Brandi will be entering her 3rd year at RPI. hillb@cs.rpi.edu

Leselrod, Michael '99 – Mike and his wife have purchased their first house in Manorville, NY.

Li, Jimmy '99 – “I've switched teams (at Microsoft) this year from “Windows CE for Automotive” to the CLR (Common Language Runtime) team, which is the heart of the Microsoft.NET. My title is still “Software Design Engineer/Test”. This is a good opportunity for me, there are tons of new things to learn.” Jimmy loves Seattle's greenery, and the good balance of city & outdoor life.

McCusker, Jim '99 – Jim has a new email address (jim@usablesoft.com) and has recently relocated to Connecticut.

Meyer, Jason '00 - “I'm working at Audium Corp. (www.audiumcorp.com), building a server side Java-based development platform for interactive voice response systems running on VoiceXML.”

Moldover, Jon '99 – “My band broke up, but I got a really great job at a place called Frog City

Send news & notes to:

multicast@cs.rochester.edu

Keep us informed!

(www.frogcity.com). I'm helping to make PC games, doing some coding, scripting, art processing, production, office support and anything else that needs to be done. Our current game, Tropico II, is scheduled to ship in early 2003.” Jon can be reached at moldover@yahoo.com.

Muderick, Aaron '98 – “We sold our small consultancy Tybio, to FullTilt Solutions in February. I still work out of King of Prussia, PA. My title is Senior Systems Architect. On the fun side, www.puttyworld.com (Crazy Aaron's Thinking Putty) continues to grow at a very brisk rate. I've introduced new content & new putty colors since the last newsletter.

Piscopo, Nick '02 – “Just wanted to tell you I have 3 kids now. Just kidding! This summer I took a trip to Eastern Europe for 2 months. When I finally get in gear & get a job I'll be sure to let everyone know!”

Redick, Bryan '02 married wife Amanda on 6/15/02, and is currently working at Johnson & Johnson, Ortho Clinical Diagnostics, Rochester.

UG Alumni News (continued)

Rutar, Nick '01 – Nick's skills as comic editor for the CT have continued to develop. Check out his regular cartoon at <http://www.vigenarian.com>. He hasn't quit his day job at IBM, however.

Siegel, Jacob '97 – "I have been married for 6 years to Eryn, and last November we had an adorable daughter – Casia Lynn Siegel. I am really enjoying being a father. I'm now working at InfoDirections. We are a telecom billing company, making software for the 2nd and 3rd tier telecom billing vendors."

Siracuse, Sarah '01 is still working at BBN in Boston, and lives near other URCS alumni Anand Bahirwani & Mike Schear.

Stern, Mia '95 CGS, CSA has completed her Ph.D. at UMass Amherst. Her thesis title is "Using Adaptive Hypermedia and Machine Learning to Create Intelligent Web-based Courses". She is currently a Post Doc at IBM Research.

Swier, Bob '01, '02 – "I finished my 3-2 Masters degree in CS this summer at UR, and in the fall will be starting at the University of Toronto for a Ph.D. in CS. The goal is to finish in four years. My new email address will be bob.swier@utoronto.ca."

VanDurme, Ben '01 – "I'm working at Lockheed Martin's Advanced Technology Lab (ATL) in the AI group. My work is all military research & development, split between spoken language systems and team-based intelligent agents. This fall I will be moving to Pittsburgh for graduate school

at CMU's Language Technologies Institute."

Wong, Chi '99 – "I have joined LVMH (Moet Hennessy Louis Vuitton), the huge luxury conglomerate as a Telecom Engineer/Coordinator. I am the technical liaison for the Americas, representing global IT between the Americas and France."

Yurasits, Kevin '01 – "I'm being milked for my worth programming, tech support, web design, consultation & server maintenance, all in one! My email address is kevin@internetworx.com."



Save the Date!
Meliora Weekend
October 11-13, 2002
 Class Reunions
 Stonehurst Regatta
 & much more!

Three Students Receive CRA Awards

Three URCS undergraduates were chosen to receive Outstanding Undergraduate Awards, Honorable Mention, from the Computing Research Association this past year. The students were nominated because of their significant research contributions as well as their strong academic records. **Steven Marx '02**, working with faculty member Chris Brown, created a new algorithm, Progressive Livewire, for object extraction and tracking through image sequences. This was published and presented at the IEEE Processing Society 2000 Western New York Image Processing Workshop, and aided the Eastman Kodak Company in beginning related research. Steve has accepted a position at Microsoft. **Nate Chambers '02 (BS), '03 (MS)** has been published as part of the research team of faculty members James Allen & George Ferguson on the The Medication Advisor for the Center for Future Health. This project is an intelligent assistant that interacts with its users via conversational natural language, and provides them with information and advice regarding their prescription medications. Nate created the flashy interactive graphic known as "Chester, the Talking Pill". He will be completing his 3-2 program during '02-'03. **Jenine Turner '03** was honored for her work both with James Allen's research group, as well as her efforts on the Undergraduate Robot Research Team. With a strong interest in natural language computation, Jenny has contributed to the robust language interface for Mabel, the Mobile Table, which was entered and won the Robot Host Event at the AAAI Mobile Robotics Competition this summer. Jenny spent the spring semester in France, and hopes to attend grad school upon completion of her undergrad work next spring.

UNIVERSITY OF
ROCHESTER

Multicast

A newsletter from the
Dept. of Computer Science
University of Rochester
PO Box 270226
Rochester, NY 14627-0226

NONPROFIT ORG.
U.S. Postage
PAID
Permit No. 780
Rochester, NY

“Multicast” is published annually by
the Department of Computer Science,
University of Rochester, Rochester, NY
(www.cs.rochester.edu). We welcome your
suggestions, contributions & participation.
Email ideas to the editor at
multicast@cs.rochester.edu

Editor/Designer.....Marty Guenther
Faculty Liaisons.....Michael Scott, Mitsu Ogihara
Contributors.....Michael Scott, George Ferguson,
Mitsu Ogihara , Marty Guenther

Correction: In *Multicast 2001*,
the graduate advisors for new
Ph.D. Amon Seagull and Aaron
Kaplan were incorrectly
identified. Both students were
advisees of Len Schubert. We
are sorry for the error!

*Please join us as guests of IBM for
a luncheon reception
Friday, October 11th
12-1:30 PM
in celebration of the installation of the
new pSeries 690 Multiprocessor &
in honor of IBM's continued commitment
to URCS*