8th Annual Computer Science Day

The department held the 8th annual CS Day on February 22, 2008. The event was a great success and included the following activities:

CS Bowl

The cold and icy weather prevented some of the high schools from attending the event but the morning CS High School Bowl was still a success with CS students and graduate students filling in for some of the teams.

Market Place

At noon, guests began to browse the marketplace to visit the thirty local and international high-tech firms that participate. To add to the excitement of the marketplace, a new activity was introduced to the CS Day schedule – the electronic scavenger hunt. The scavenger hunt was designed by CS undergraduate student, Alex Connor, in an effort to increase visitation at the marketplace tables. Participants who successfully completed the scavenger hunt were eligible to receive one of four prizes. The scavenger hunt was implemented as a system of RFID readers and tags. After checking in, each participant was given a fictitious RFID-enabled ID card, and then given instructions on how to compete. Participants were directed to visit different tables in the marketplace, scan their ID cards, talk with representatives, and then instructed to visit ten additional tables.

CS Alumni Panel

In the afternoon, guests attended a panel discussion with CS Alumni business owners. The panel consisted of: D. Raja from CEI, Peter Karlovich from E-Transport and Mike Gualtieri of Kiddix Computing. Mark Borger of the Technology Collaborative served as the moderator.

Digital Media, Research, & Poster Competition

Other activities included the Digital Media Contest, Research Competition and Poster Competition. Bob Hoffman, a member of the CS tech staff and the Director of Operations, won the Digital Media Contest with his video “How to Upgrade a Computer Lab in 3 Minutes.” Graduate students also competed for the honor of the best research award. This year, the competition was sponsored by Compunetix. Michal Valko received the Graduate Student Research Award and Ihsan Ayyub Qazi received the Runner-Up award.

In addition to the research competition, Ericsson awarded prizes for the Poster Competition. Graduate Winners were: Shenoda Guirguis – Best Graduate Poster, Michal Valko – Runner-Up and Peoples’ Choice Award. Undergraduate winners were: Danny Allen – Best Undergraduate Poster and Peoples’ Choice Award, Brian Madden and David Wilkinson – Runners-Up.

Alumni Social

A social gathering was held at the Wyndham Hotel following CS Day for alumni, faculty, industry representatives and students, sponsored by Google. Over sixty guests attended to conclude another successful and exciting CS Day.
Sangyeun Cho

Assistant Professor Sangyeun Cho received one of the two 2008 A. Richard Newton scholarship awards. Sangyeun received this award on June 10 at the Design Automation Conference (DAC) in Anaheim, California. The two Pitt CS students designated to be supported by this scholarship are Hyunjin Lee and Musfiq Rahman. According to DAC, the scholarship is intended to support graduate students of faculty investigators at universities trying to establish new programs in electronic design automation or circuit design and/or graduate students of young faculty investigators (assistant rank) working in electronic design automation and circuit design.

The title of Professor Cho’s award proposal is “Bridging Technology Fragility and Next-generation Many-core Processor Architectures and System Research.”

Rebecca Hwa

The National Science Foundation has awarded Rebecca Hwa a prestigious NSF CAREER Award for her research entitled CAREER: Robust Parsing for New Domains and Languages. The award funds junior faculty members’ emerging careers and includes an education component that encourages outreach to women and underrepresented minorities.

Her project aims to improve the ability of computers to process and translate human language. She will address the difficulty many systems have in processing texts from such specialized domains as business e-mail or scientific literature as well as texts that are automatically translated from foreign languages. Specifically, Hwa will create machine-learning algorithms that find correspondences between “standard English” and texts from specialized domains. The project focuses on three types of correspondences: direct translations, such as bilingual documents; loose translations, e.g., paraphrased articles; and indirectly related texts without an explicit translation.

Building from these correspondences, a standard system will be adapted to translate texts in specialized domains. Better language processing for a wide range of texts could allow for such computer applications as intelligent tutoring programs and data mining for medical documents. Rebecca is an Assistant Professor who joined the department in 2003. She received her BS in Computer Science and Engineering from UCLA in 1993 and her PhD in Computer Science from Harvard University.

Alexandros Labrinidis

Dr. Alexandros Labrinidis, Assistant Professor is the latest recipient from Pitt of the NSF’s prestigious CAREER Award which recognizes junior faculty who exemplify the role of teacherscholars. Dr. Labrinidis’ proposed research activities focus on user-centric data management. In particular, he plans to make database-driven web sites more “tailorable” to the preferences of users.

As the Internet becomes more widespread and its users (and content) more diverse, the need for personalization is expected to increase dramatically. To address this need, Dr. Labrinidis aims to (1) expose quality information from Web data sources, (2) empower users to specify their preferences for the different dimensions of quality through an intuitive framework, called Quality Agreements, and (3) devise ways to influence resource allocation decisions according to user preferences. Towards this, the project will reexamine traditional query processing techniques in order to consider user preferences and also address new challenges, stemming from the users’ need to adapt their preferences over time and their ability to collaborate. Dr. Labrinidis’ proposed project activities include a validation component of the Quality Agreements framework through a user study, the evaluation of the proposed algorithms analytically and experimentally, and development of prototypes. The experimental aspects of this research will generate many opportunities for graduate, undergraduate, and high-school students to participate in the research and development of new technologies.

Taieb Znati

After years of networking research, Taieb Znati became the Director of the CNS (Division of Computer and Network Systems) for the National Science Foundation. CNS supports research and education activities that invent new computing and networking technologies and explore new ways to make use of existing technologies. The Division seeks to develop a better understanding of the fundamental properties of computer and network systems and to create better abstractions and tools for designing, building, analyzing, and measuring future systems.

Taieb joined the department with a joint appointment in the Graduate Program of Telecommunications in 1988. He received his MS from Purdue University and his PhD from Michigan State University.
Adam J. Lee

Dr. Adam Lee joined the Computer Science Department as an Assistant Professor in the Fall of 2008. He received the MS and PhD degrees in Computer Science from the University of Illinois at Urbana-Champaign in 2005 and 2008, respectively. In 2003, he received his BS in Computer Science with a minor in Applied Mathematics from Cornell University. While at the University of Illinois, Dr. Lee was a member of the Database and Information Systems (DAIS) laboratory. He was also affiliated with the University of Illinois Information Trust Institute (ITI), an academic/industry partnership targeting application areas such as electric power, financial systems, defense, and homeland security, among others.

Dr. Lee’s research interests lie at the intersection of the computer security, privacy, and distributed systems fields. His doctoral work focused on the design and optimization of efficient and provably-secure authorization approaches that enable secure interactions across organizational boundaries, such as trust negotiation and distributed proof construction. This work led to several research honors including a Motorola Center for Communications Graduate Fellowship, a Cisco Systems Information Assurance Scholarship, and invitations to submit three papers to fully-refereed issues of ACM Transactions on Information and System Security containing extended versions of the top papers from the ACM CCS and SACMAT conferences. Dr. Lee is currently pursuing a number of research topics within the security and privacy space, including authorization protocol design and optimization, privacy-preserving policy evaluation, and a variety of techniques to make formal proof construction approaches more flexible and responsive to uncertainty. He is also interested in developing usable techniques for quantitatively analyzing the often complicated security policies that control access rights within large organizations.

Liz Marai

Dr. Liz Marai joined the Computer Science Department as an Assistant Professor in the Fall of 2007. She also holds an adjunct faculty appointment with the Robotics Institute at Carnegie Mellon University.

Dr. Marai received her PhD in Computer Science in May 2007 from Brown University. While at Brown, she was a member of the Graphics group and worked closely with researchers at the Medical School and in the Biology and Evolutionary Biology Department. In 1997, she received her BS in Computer Science and Engineering from the “Politehnica” University in Bucharest, Romania.

Dr. Marai’s research interests are in computer graphics and visualization, with a focus on computational modeling, visualization and automated analysis of data across disciplines. Her doctoral work at Brown University focused on constructing predictive models of anatomical joints from incomplete data, an example of successful, close collaboration between computer scientists and life scientists.

Jonathan Misurda

Jonathan Misurda joined the Computer Science Department as an Instructor in the Fall of 2007. He received the MS and BS degrees in Computer Science from the University of Pittsburgh in 2005 and 2003, respectively. He is currently working on finishing up his PhD in Software Engineering and hopes to be finished in the next year. His research focuses on improving the way that large programs are tested to ensure they are nearly free from bugs. The work is done under the advisement of Dr. Bruce Childers.

As an instructor, Mr. Misurda teaches two undergraduate courses a term. Typically these include Operating Systems and Introduction to Systems Software, a course he revamped to teach C programming and the low-level interaction between software and the system.
New Departmental Grants since July 2007

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<th>Faculty</th>
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<td>Amer</td>
<td>Hardening Distributed Data Stores for Disaster Recovery</td>
<td>NSF</td>
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<td>Chiarulli</td>
<td>Rapid Isolation Purification &amp; Assay of Nano Scale Biological Particles</td>
<td>Innovation Works</td>
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<td>Childers</td>
<td>Rereact: A Robust Execution Environment for Fragile Multicore Systems</td>
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<td>Childers/Cho</td>
<td>Yield and Reliability for on Chip Multicore Memories in Nanoscale Technology</td>
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<td>Childers/Melhem/Mossé</td>
<td>TERA PCM A Low Terabyte Main Memory Using Phase Change Memory</td>
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<td>Hwa</td>
<td>Career: Robust Parsing for New Domains and Language</td>
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<td>Learning Syntax Based Evaluation Metrics for Machine Translation</td>
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<td>Discriminative Knowledge-Rich Language Modeling for Machine Translation</td>
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<td>Labrinidis</td>
<td>Modeling in Vivo Protein DNA Interactions from HIS Throughput Data MP1/1</td>
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<td>Labrinidis</td>
<td>Career: User Centric Data Management</td>
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<td>Mossé/Znati</td>
<td>Designing Resilience for Communities at Risk</td>
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<td>Wiebe</td>
<td>Student Research Workshop in Computational Linguistics</td>
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<td>Wiebe</td>
<td>Text Extraction &amp; Data Visualization for Pet Health Surveillance</td>
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<td>Wiebe/Hwa</td>
<td>NLP Foundational Studies &amp; Ontologies for Syndromic Surveillance for Ed</td>
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2008 IBM Faculty Award

Professor Kirk Pruhs is the recipient of a 2008 IBM Faculty Award for his work on “Algorithms for Integrated Scheduling and Power Management.” The IBM Faculty Awards is a worldwide competitive program. Nominations for these awards are initiated by someone within IBM. Professor Pruhs joined the department in 1989 after receiving his PhD from the University of Wisconsin, Madison and his research accomplishments have been published in over 100 papers in the top journals and prestigious, peer-reviewed conferences and workshops in his field.

2006–2007 Faculty Teaching Awards

The department’s teaching awards are given to faculty for achieving the highest student evaluation score for overall effectiveness during the academic year.

**Part-time Faculty:**
- George Jucha & Ken Jensen

**Core undergraduate courses:**
- George Novacky

**Upper-level courses:**
- John Ramirez & Rebecca Hwa

**Graduate level courses:**
- Kirk Pruhs

2006–2007 Graduate Student Awards

The department recognizes outstanding Graduate Students in both teaching and research each year.

**Taulbee Award:**
- Lory Al Moakar

**Runners-Up (Taulbee Award):**
- David Essary & Ricardo Villarin-Salomon

**Mellon Fellows:**
- Mohamed Aly & Lei Jin

**TA Mentor:**
- Lory Al Moakar
Undergraduate News

The past (2007–2008) academic year has been another productive one for Computer Science undergraduates. Here are some of the activities and honors:

Best Poster Award

Alex Connor, an undergraduate student and a member of the Advanced Data Management Technologies lab directed by Professors Panos K. Chrysanthis and Alexandros Labrindis, won the best poster award at the ACM SIGMOD 2008 Undergraduate Poster Competition. His poster entry was entitled “Nearest Neighbor Queries over Graph Data”. Alex was one of the initial five winners and the only one from North America who were invited to present their research posters at the 2008 SIGMOD/PODS conference in Vancouver, Canada. ACM SIGMOD is one of the most prestigious, peer-reviewed conference in the area of Data Management.

Outstanding Undergraduate Student Award

Brian Wongchaowart was this year’s (2007–2008) winner of the Outstanding Undergraduate Student Award. This award is given by our department annually to the student who best represents what we want our majors to be, both in the classroom and in other activities. Brian will graduate with a double major in Computer Science and Classics. Although students with double majors often take the minimum requirements in each major, Brian is doing the opposite, greatly exceeding the CS graduation requirements while maintaining a perfect GPA of 4.0.

Computer Science Honors List (2006–2007)

To be on this list students must be declared CS majors and full-time students over the course of the academic year. Honorees must also have taken a minimum of 3 total and 2 upper-level CS courses, and they must have had a CS GPA of 3.75 and a total GPA of 3.5 for the year. Because the academic year must be completed prior to determination of this list, it is one year behind the most recent academic year.

Joshua Albrecht    Timothy Hirsh    Michael Sabatini
Daniel Boeve      Nathan Homitsky   Jonathan Smith
Eric Conlon       John Knox III     Robert Walsh
Bruce Evans       Richard Matchet Jr  David Wilkinson
Nathan Good       Michael Nugent     Brian Wongchaowart

Pitt Programming Teams

The Pitt Programming Teams again competed at the ACM Regional Programming Competition and the CMU Invitational Programming Competition. This year’s programming teams for the ACM Competition were:

Pitt Blue    Pitt Gold
Eric Conlon  Corey Bonnell
Nick Farnan  Callen Shaw
Jarrett Billingsley  Heather Friedberg

Out of 114 teams on the East-Central region, Pitt Gold finished 46th and Pitt Blue finished 65th. Congratulations to both teams for a great effort.

Due to December graduations, Pitt Blue had to be reformulated for the CMU Invitational, but Pitt Gold remained intact. For the CMU Invitational, Pitt Blue consisted of:

Andrew Conn
Matt Czarnek
Joshua Katz

At this competition, Pitt Gold finished in 7th place and Pitt Blue was in the top 25. We are looking forward to more strong programming from our teams in the upcoming year.

Graduate News

NFTE Entrepreneurial Award

Graduate Student Tonya Groover was named a 2007 Entrepreneur of the Year by the National Foundation for Teaching Entrepreneurship (NFTE). Tonya has been highlighted in previous issues of LINKs for her outstanding contribution to the Computer Science Department with her time involved in the Technology Leadership Institute (TLI), a program that provides underrepresented and minority students the opportunity to explore their interest in computer science.

The Entrepreneurial Award recognizes a NFTE graduate who is committed to giving back to the community through his or her business.
Dr. Pan was born in China and entered Tsinghua University in 1978 with the highest college examination score among his entire high school graduating class. Dr. Pan went on to receive his BS Eng, and MS Eng degrees in computer engineering from Tsinghua University in 1982, and 1984, respectively. He then enrolled at the University of Calgary. After a short time, Dr. Pan transferred to the University of Pittsburgh, where he received his PhD degree in computer science in 1991. Currently, he is the Chair and a Professor in the Department of Computer Science, and a Professor in the Department of Computer Information Systems at Georgia State University. Dr. Pan’s research interests include parallel and distributed computing, optical networks, wireless networks, and bioinformatics. To date, Dr. Pan has published more than 100 journal papers. Dr. Pan is also a coauthor/coeditor of thirty four books. He is currently working on bioinformatics and wireless networking research. In particular, he is trying to use machine learning methods to do protein structure prediction.

Q: What led you to the University of Pittsburgh?

A: I did not receive any financial support from any of the Universities in the USA. I decided to go to Canada to pursue my PhD degree when the University of Calgary offered me full support. Before I left China for Canada, I met Professor Chuang during his visit in China. I introduced myself to him and he told me that he remembered my application, which was very impressive. He promised that he would talk to the graduate director and reconsider my application. He did – and I transferred to the University of Pittsburgh after 4 months in Canada. I was the first Chinese student ever to be admitted as a first year student with financial support.

Q: Do you have any fond memories of your days at the University of Pittsburgh?

A: The first class that I taught in the United States was at Pitt. I remember that I was very nervous at first, but gradually I became confident as I realized that the students enjoyed my teaching style even though I had a strong accent. I also believe that I was the first international student to serve as the Pitt CS Graduate Student Organization President. My fellow students referred to me as “Uncle Pan.”

Q: What have you been doing since you graduated?

A: I joined the University of Dayton right after I received my PhD degree. After spending nine years there, I decided to move to a research university. In 2000, I became an Associate Professor at Georgia State University. I became the Chair at GSU in January 2005.

Q: What achievements are you most proud of?

A: Since I became the department chair in 2005, the department has made a lot of progress with visible achievements. The department is becoming visible internationally in certain research areas such as bioinformatics. Since I started to do research in bioinformatics only 4 years ago, I have become a prominent figure in the field of bioinformatics. I am the editor-in-chief of a bioinformatics journal, a series editor of a bioinformatics book series, and a major organizer of an annual bioinformatics conference series. Due to my achievements, I received the Outstanding Achievement Award at the 7th IEEE BIBE Conference held at Harvard University in October 2007. I am proud of my achievements, especially since I have earned them in such a short period – 4 years – after knowing little about bioinformatics. So far, I have graduated 7 PhD students and most of them have found tenure-track or research scientist positions.

Dr. Pan is currently working on bioinformatics and wireless networking research. In particular, he is trying to use machine learning methods to do protein structure prediction.
2007–2008 Alumni Gatherings

Throughout the 2007–2008 academic year, the Computer Science Department and the Computer Science Industry Board hosted several alumni events. The alumni events proved to be a great success. These gatherings offer computer science alumni the chance to network with old classmates, faculty members, and industry representatives. The gatherings took place at various locations on or near campus during the fall and spring terms. Alumni who attended ranged from a 1976 BS degree to a 2008 PhD degree. These events are a great way to network with other alumni and members of the Industry Board. In addition, alumni have the opportunity to mingle with their old professors and meet new faculty members in the department. We encourage our graduates to attend these events to visit with familiar faces and keep the department a part of your life! If you are interested in hearing about upcoming alumni events, please register at our alumni database at www.cs.pitt.edu/people/alumni or join the alumni mailing list: cs-alumni@cs.pitt.edu.

Department of Computer Science Distinguished Lecturer Series

All lectures are held in:
5317 Sennott Square
210 S. Bouquet St.

Refreshments: 10:00 am
Lecture: 10:30 am

Eduard Hovy
University of Southern California
Building and Verifying a Shallow Ontology for Higher Quality NLP
September 5, 2008

Trevor Mudge
University of Michigan
Pico Server – Building a Compact Energy Efficient Multiprocessor
September 19, 2008

Michel Goemans
Massachusetts Institute of Technology
Approximation Algorithms
October 17, 2008

Sponsored by:
Bank of New York Mellon
CEI
Fed Ex Ground
Union Switch & Signal
Vocollect

Michael Scott
University of Rochester
Transactional Memory: The Surprising Complexity of a Simple Idea
November 7, 2008

David Maier
Portland State University
Next-Generation Data Stream Systems
November 21, 2008

For more information:
www.cs.pitt.edu
(412) 624-8490