Malony Active in High Performance Computing Projects

Professor Allen Malony is principal investigator for the Petascale Productivity from Open, Integrated Tools (POINT) project that will enhance performance tools to better support user needs in high-performance computing (HPC) projects such as global climate modeling. The National Science Foundation recently awarded a $2.19 million grant to the UO and its partners for POINT. The other institutions sharing in the grant are the University of Tennessee, the National Center for Supercomputing Applications (NCSA), and the Pittsburgh Supercomputing Center.

The POINT project has just completed the first quarter of a three-year grant. During this period, the team has outlined strategies for integration and interoperability among component tool sets and has begun planning pilot sessions for POINT training.

The POINT project will improve and support a parallel performance environment that integrates four leading performance tools: PAPI, KOJAK, PerfSuite, and TAU (Timing and Analysis Utilities). The TAU Performance System* is a leading open-source, parallel-performance tool suite for scalable HPC systems developed at the University of Oregon. TAU is able to gather rich performance information and display results graphically, allowing users to quickly identify performance bottlenecks.

Malony is also the director of the Neuroinformatics Center (NIC) at the University of Oregon. The NIC is developing advanced integrated neuroimaging tools that combine EEG and MRI methods for next-generation brain analysis.

High-performance computing plays a significant role in the research at the center. Their projects include the development of inverse models of the brain’s electrical activity. This research supports development of noninvasive EEG machines. They also build fast-signal decomposition and cleaning tools that are being used by scientists to help gather and interpret neurological data sets.

The NIC develops solutions with high-performance computing in mind, taking advantage of the parallel computing power of their ICONIC grid. They are currently working with grid technologies to provide modular, high-performance computing resources to scientists worldwide.

* The name “TAU Performance System” is a registered trademark.
I've been teaching at the University of Oregon for 8 years, and I'm always excited to see the progress our students make. This year, our team won the ACM Pacific Region Programming Contest, finishing in 1st place for the second consecutive year. The competition is a great opportunity for our students to showcase their skills and compete with the best in the region.

In addition to the contest, I've been working on several research projects. One of them is focused on neural electromagnetic ontologies (NEMO), which is a data-mining approach to discover neural electromagnetic ontologies. The project aims to address a critical need for tools to support representation, storage, and sharing of brain electromagnetic data.

Another project I've been involved in is the establishment of the Network Security Research Laboratory. This lab focuses on developing techniques for protected client data sharing and Internet source address validity enforcement. The prestigious NSF Career Award board recognized my research in 2007.

On a personal note, my family and I have been enjoying exploring the Brainerd area. We love to soak in geothermal pools and enjoy the natural beauty of the region.
Eric and Shelby Wills Moved By Interest in Gaming to Stay in Eugene

Eric Wills ’00, M.S. ’02, Ph.D. ’08, and Shelby Stair Wills ’02, two Oregon natives, are both involved in gaming in Eugene. Eric teaches the Introduction to Game Theory course (EC 327) at the UO and works for Kailbridge Inc. Shelby works as a producer at Pipeworks, and is passionate about getting more women involved in games.

“When I came to the UO,” Shelby admitted, “I didn’t think I could major in computer science with no programming experience.” However, Michael Hennessey, a senior instructor in the department, urged her to try. She did well in the program and was on the winning team in the department’s programming contest in 2001. In 2002 she graduated from Oregon with a bachelor of science in CIS and a minor in Japanese, and headed to a job in Seattle at a UW spinoff that produced optimization software there, where she moved from the quality assurance division to a position responsible for training staff members and working with customers on feature requests. After a few years, she moved back to Eugene and worked remotely.

In the meantime, Eric was pursuing his Ph.D., having received his bachelor of science with honors from the UO in 2000. He stayed to receive his master of science in 2002. His work with Professor Kent Stevens on DinoMorph led Eric to continue into the Ph.D. program, and eventually they got married. Along with Daniel Mayhew, founded Kailbridge Inc. Eric is director of research and development at Kailbridge, which produces software used for commercial applications, based on Kent and Eric’s research in vertebrate palaeontology. The original, student-generated DinoMorph program was used by Professor Stevens to show, among other things, the proper mounting of the Tyrannosaurus Rex. The company produces software used for broadcast media, most notably the BBC and Discovery Channel, as well as game software to interest kids in dinosaur studies.

Shelby moved back to Eugene in 2004, and the two were married in 2006. Eric’s work in innovative 3-D graphics and animation at Kailbridge was simultaneous to working on his Ph.D. at the UO. He finished his thesis last year and is now working as an adjunct assistant professor in the department, teaching game development and graphics as well as continuing his R&D work at Kailbridge.

Shelby is now working at Pipeworks Software as a game producer. While at Oregon, she started her gaming career when she interned at BraveTree Productions, which has since become part of Garage Games. In August 2005, she started at Pipeworks as a junior programmer writing scripts for Rampage: Total Destruction for the PS2 and Wii. Her next project was producer on Godzilla: Unleashed. “As producer, I’m responsible for the project, the team of designers, artists, and programmers, and the client relationships. Although not all producers come from the technical side,” she said, “I find that the technical skills I acquired with my degree help me to communicate with my team and to dig in to solve problems on the project.”

As an accomplished local member of the gaming establishment, Shelby had the opportunity to talk to Eric’s gaming class. She also recently participated in a panel at the 2008 Penny Arcade Expo (PAX) in August titled “How to Get Your Girlfriend into Gaming.” Through opportunities like that, she is interested in getting more women involved in both sides of gaming. Her initial misgivings about getting into computer science and her success in the field compel her to reach out to other women and help them feel that this is the career for them.

Gary Bricher Tames Spassky, Maiden Moor, and the Internet

Alumnus Gary Bricher learned his B.S. in 1975 and M.S. in 1977 while commuting each day from his home in Cottage Grove with his father, who managed a local wholesale lumber company. When he first enrolled at the UO in the late sixties, there was no CIS department.

Gary earned an undergraduate degree in mathematics and threw the discus for the Bill Bowerman–coached track teams of 1966–68. After working as a computer operator on an IBM 360 mainframe in the Navy, he returned to the UO to study computer science in 1973.

Bricher was a student in some of the first classes taught by professors Art Farley and Andrzei Proskurowski in 1974 and 1975. His favorite courses in graduate school were computational theory and graph theory from Proskurowski. In 1977 he didn’t envision a career as a network administrator, but later found that the theoretical courses in grad school helped him when he became a local area network administrator in the late eighties. He worked twenty years for the Lane County Department of Public Works, first as a programmer, then working his way up to systems programmer, network administrator, and finally, network infrastructure manager. He joined the computer information technology faculty at Lane Community College in 1998, specializing in networking technology. In addition to teaching a full load at LCC, Gary finds time to teach one course a year for the CIS department.

A lifelong chess player, Gary grew up in Cottage Grove with three brothers who learned chess from their father and played each other from a young age. When he was an undergraduate, he was a member of a UO chess team that won the Northwest intercollegiate regional chess tournament. His younger brother James is a three-time Oregon state chess champion. One of Gary’s prize chess accomplishments was a draw with former world champion Boris Spassky at a simultaneous exhibition in Reno, Nevada.

He enjoys cross-country skiing and hiking in the Cascades, and has hiked in the Czech Republic, Scotland, and Switzerland while on vacation. This past summer while on vacation with his wife, UO education professor Marilyn Nippold, he climbed Blencathra and Maiden Moor in the Lake District of England. The hiking was preceded by a visit to New York, where Marilyn presented a paper at a conference on child language acquisition.

Yolanda Reimer Studies Human Computer Interaction in the Rockies

Yolanda Reimer left the UO in 2002 with her Ph.D. in computer and information science and immediately went to work at the University of Montana teaching and continuing her work in human-computer interaction. She received the prestigious NSF Career Award to continue her research in electronic note-taking interfaces, and last fall began work on a new NSF grant titled “Investigating and Refining the Studio Experience as a Method for Teaching Human-Computer Interaction,” which seeks to leverage knowledge about design education from architecture and industrial design to develop new educational models and materials for the design of software-intensive systems, specifically in human-computer interaction. This grant is a collaborative effort with researchers at Virginia Tech and with Professor Sarah Douglas, Yolanda’s doctoral adviser while at Oregon.

“I really want to focus on the people aspect of computing,” says Yolanda. “From my perspective, no matter how fast or glitzy a computer application is, if it’s not designed to be useful and usable for the end-users, it won’t be adopted by them the way it should and could.”

For a while, Yolanda was living with her husband in Boston, working for Andersen Consulting, a technology consulting firm. She enjoyed her work, but ultimately wanted to find a career that was more fulfilling and to live in a place that offered better quality of life. “My husband and I were both accepted to the University of Montana, and we readily moved to Missoula. We were immediately taken with the university, community, and outdoor opportunities afforded to us by living so close to the mountains.

After two years we moved on to Eugene, which we also really enjoyed, especially the university and the proximity to the coast, the Cascades, and Portland. We were fortunate also to live in a small cottage on an organic farm in Fall Creek, and that helped restore us on a daily basis.”

At the UO, Yolanda studied with Professor Douglas and helped develop the user interface for the ZFIN project. She also began her interest in user interfaces for electronic notebooks, which became her thesis topic. “When we were both done with our doctorates,” she said, “we were faced with the two-body problem, and were incredibly lucky to find jobs back at the University of Montana.”

Yolanda’s husband, Eric, who also received his Ph.D. in English at Oregon in 2002, teaches at the University of Montana, specializing in contemporary British and Irish literature as well as computers and writing.

Alumni News

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**Molly Suver: Athlete, Artist, and Reluctant Computer Scientist**

When Molly Suver was young, studying computer science was the last thing she wanted to do. Her family was firmly entrenched in computer science, starting with her great-grandmother, who was a computer (at that time, the term computer referred to a person who operated an adding machine). Molly’s great-grandmother calculated the volumes of earth to be moved or filled at construction sites, and her father was a cofounder of MicroQuill, a company that provides innovative solutions to symmetric multiprocessing. Everyone in her family was in the computer industry, so of course Molly wanted to be an artist, until she took a programming class at North Seattle Community College. “Neither Claire, my twin sister, nor I wanted anything to do with programming until we took our first course, and then we loved it. My dad was totally right.” Following in her parents’ footsteps, Molly and Claire enrolled at the University of Washington, where her grandfather taught. Although UW was the perfect fit for Claire and for Molly and Claire’s older sister, both in computer science, Molly was unhappy with the atmosphere and also wanted to differentiate herself from her twin.

Molly visited the UO campus and spoke with Associate Professor Chris Wilson. “Chris made the program very accessible and friendly, and it also seemed like there was a lot of opportunity to personalize my education with interdisciplinary studies.”

The other deciding factors for coming to the UO were its proximity to her home in Seattle and its ultimate Frisbee team. Molly and Claire are both consistently ranked in the top tier of college ultimate Frisbee players, making the Ducks-Huskies rivalry all the more interesting. Molly is beginning her second year as the captain of the women’s team at Oregon. She started playing eleven years ago and won the gold in 2006 as captain of the USA women’s team in the Junior World Games. Although she veered away from majoring in art, Molly is still passionate about it. She prefers charcoal or digital painting, but also dabbles in culinary arts as a form of expression. She enjoys hosting dinner parties where she can be creative in the kitchen. She is highly skilled in cake decorating.

Whether she was going to study fine arts or computer science, Molly’s career goal has always been the computer game development industry: “While I still wanted to study art, my father introduced me to the CEO at Valve, my ideal employer. He suggested that artists come and go, but people with strong technical skills are always in high demand. I decided that, although I probably couldn’t make a career out of it, I could still do art on the side.”

Molly participates in the Game Development Club, which was formed last spring by the students of Eric Wills’ game course to continue to develop their skills and résumés. She has also been an active coder in the Cake and Coding Saturdays, although she has not provided her cake-decorating skills for that group.

**Faculty Profile**

**Stephen Fickas**

Professor Stephen Fickas started his career down the road at Oregon State University, but has been instrumental in shaping the undergraduate curriculum at the University of Oregon. In the early seventies, when Steve was an undergrad, the UO CIS department was just taking shape, and OSU did not yet have a department, so he majored in mathematics. From there, he moved to the University of Massachusetts to get his master’s degree in computer science and worked as a network research scientist at the U.S. Navy Electronics Laboratory in San Diego. He went on to get his Ph.D. from UC Irvine in the early eighties before moving back to teach at Oregon, where he has been since 1983.

Steve’s research is broadly contained within the category of software engineering. This year, he is general chair of the thirty-first annual International Conference on Software Engineering, to be held in May in Vancouver, British Columbia. Throughout the nineties, Steve was chair or cochair of major conferences, but ICSE is the flagship conference of the software engineering community.

Steve has written many papers on requirements engineering, receiving an IEEE Award of Distinction in 1994, and is interested in ubiquitous computing, which involves both wearable computing devices and embedded computing devices in the home. The combination of these two fields led to an interest in rehabilitative and assistive technologies. He has partnered with interdisciplinary teams from the UO Departments of Communication Diseases and Disorders, Geography, and Psychology, Eugene School District 4J, and Lane Transit District to develop devices that can be used by adults and kids with acquired and developmental cognitive disabilities.

“I think that working with people with brain injuries and developmental disabilities is interesting not only because of the difficulty in the requirements-engineering process, but also in the satisfaction of having created a tangible device that makes someone’s life better,” Steve said. “I am lucky to work at the UO, where interdisciplinary cooperation is the norm. I bring my expertise in software engineering, and my research partners bring their expertise in working with disabled individuals. We all learn from each other.”

On the teaching side, Steve has been instrumental in developing the undergraduate computer science curriculum at Oregon. He organized and taught CIS 210, Computer Science I, when the curriculum changed to Java. Recently, Steve has written funding for undergraduate researchers into most of his grants. Over the past summer, he had six paid undergrad researchers working on various problems in assistive software. Several of these have carried over into positions in the fall.

In his free time, Steve is an avid surfer, which he picked up in his time in southern California. He is also an amateur saxophonist. In more recent years, he has begun going to jazz camp each summer. This has inspired him to look for ways to use GarageBand software as a rehabilitative instrument for the cognitively disabled population.

**Student Profile**

**Molly Suver: Athlete, Artist, and Reluctant Computer Scientist**

**Steam is**

- Born and raised in Seattle.
- Attended West Seattle High School.
- A student at the University of Oregon.
- Majoring in computer science.
- Enjoys Ultimate Frisbee, cake decorating, and art.
- Participates in the Game Development Club.
- Enjoys hosting dinner parties where she can be creative in the kitchen.
- Is highly skilled in cake decorating.
- Prefers charcoal or digital painting, but also dabbles in culinary arts as a form of expression.
- Has been an active coder in the Cake and Coding Saturdays.

**Order of the Emerald Abacus**

In 2006, the department established the Order of the Emerald Abacus for alumni of more than twenty-five years. The society meets each year at graduation. Eligible alumni should have received a letter from the department. If you earned your degree prior to 1983 and have not received your invitation, please contact us at outreach@cs.uoregon.edu.

**2008 Inductees**

- Mr. Douglas Benson  
- Ms. Debbie Blanchard  
- Ms. Janet Buschert  
- Mr. Joshua Gordon  
- Mr. William Hopper  
- Ms. Janis Johnson  
- Mr. Eddie Li  
- Mr. Mr. Tom Milligan  
- Ms. Tom Monahan  
- Mr. Michael Samuelson  
- Ms. Karen Ward  
- Ms. Sherry Wysong  
- Ms. Barbara Zanzig

**Faculty Profile**

**Stephen Fickas**

- Professor of computer science at the University of Oregon.
- Formerly at Oregon State University.
- Research interests include requirements engineering and ubiquitous computing.
- Has written many papers on requirements engineering and received an IEEE Award of Distinction.
- Interested in rehabilitation and assistive technologies.
- Partners with interdisciplinary teams from various departments to develop devices for people with disabilities.
- Enjoys surfing and playing the saxophone.

**Student Profile**

**Molly Suver**

- Computer science major at the University of Oregon.
- Participates in the Game Development Club.
- Enjoys Ultimate Frisbee, cake decorating, and art.
- Has been an active coder in the Cake and Coding Saturdays.
- Is skilled in cake decorating.
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