Dhabaleswar (DK) Panda is creating software that helps supercomputers tackle some of today’s most complex issues, from analyzing DNA sequences to projecting climate change to complex financial modeling.

The software, called MVAPICH – which stands for “MPI for InfiniBand on VAPI Layer,” works by connecting traditional supercomputing software with innovative networking technology that speeds data flow. The focus is to improve the efficiency and speed of communication by increasing bandwidth and reducing latency. The MVAPICH library is utilized by applications to facilitate high performance computing in a scalable and fault tolerant fashion – in other words, faster and with capability to handle faults.

For almost two decades, Message Passing Interface (MPI) has been a standard for writing and executing parallel programs on parallel computing systems. Traditional parallel computing systems used either standard Ethernet connections or proprietary interconnects (like Myrinet or Quadrics). InfiniBand (standing for Infinite Bandwidth) was introduced in 2001 as a new networking standard for delivering high performance. Even though it is a general networking standard for all kinds of systems and servers, the HPC world started using this standard first. In the past, however, there was no high performance and scalable design of MPI for InfiniBand.

Panda and his research group, NowLab – the Network-Based Computing Research Group, started to design a High Performance and Scalable MPI Library for Clusters with InfiniBand after the standard was introduced in 2001. Results from this research direction were integrated into open-source high performance and scalable Message Passing Interface (MPI) software, MVAPICH. The HPC community quickly adopted this new software. Since 2001, steady research has been taking place, and results from this research direction are continuously added to the software. A few years back, the 10Gigabit Ethernet world adopted some of the RDMA (Remote DMA) features of InfiniBand into a new 10GigE/iWARP standard. Panda’s research group also adopted this new standard into their research and provided solutions in the MVAPICH software. There are currently two versions of this software – MVAPICH (following MPI-1 standard) and MVAPICH2 (following MPI-2 standard). MVAPICH is being used by more than 660 organizations worldwide, in 42 countries. These organizations include major national and research laboratories, industry and universities. They focus on diverse HPC applications – aeronautics, astronomy, physics, chemistry, space, automotive, engineering, mechanical, oil and natural gas, medicine, finances, bio-informatics, etc.

CSE Ranking Continues to Improve

According to the US News and World Report 2009 Edition of America’s Best Graduate School released in April, the ranking of CSE at Ohio State has continued to improve, stepping up to 31st among all PhD granting Computer Science Departments and 16th among public universities. The department was ranked 35th in 2002 and 34th in 2006.

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Message from the Department Chairperson

Dear CSE Alumni, parents, friends and colleagues,

I would like to welcome you to the second issue of the Buckeye Blog, which is published to share information about the CSE-OSU community. Since publishing the first issue last autumn, we have received many positive responses from our graduates. In this issue, you will learn more about what our alums, faculty and students have been doing.

During my travels to conferences and visits to different institutions, I have paid special attention to our alums. I have met many accomplished CSE graduates in a variety of places, such as Cisco, Intel, Yahoo!, IBM and many U.S. academic institutions. While attending a conference in Taiwan last December, I visited computer science departments in two top universities, where our graduates are the department chairs (Professor Chung-Ming Huang, PhD ’91, chairs the Computer Science Department in National Cheng Kung University; and Professor Yu-Chee Tseng, PhD ’94, chairs the Computer Science Department in National Chiao Tung University).

This issue will highlight some of the recent successes of several of our alumni, and I wish to congratulate them personally. Doug Roble, PhD ’92, received his second Academy Award for developing a fluid simulation system. Two alumni, Murat Demirbas, PhD ’04, and Nigamanth Sridhar, PhD ’04, received the prestigious NSF CAREER award for their research. Finally, Shiv Kaushik, PhD ’95, was elevated to Intel Fellow.

The CSE faculty members are currently working hard to do a self-assessment, and to outline a strategic plan for the next five years. Our External Advisory Board will be meeting in May, and I would like to thank Doug Roble and Shiv Kaushik for agreeing to participate as our newest members. Since our field is changing rapidly, we need a plan for our future that is both timely and adaptive.

Please continue to keep us informed about your professional and personal development and successes, which is an important part of the CSE family.

Xiaodong Zhang
Chair and Robert M. Critchfield Professor

Upcoming Alumni Events
http://engineering.osu.edu/alumni/index.php

Architecture and Engineering Weekend

• September 4th: 50th Anniversary Celebration: Members of the Class of 1958: Plan to join the evening reception at the home of University President E. Gordon Gee.

• September 5th: Dean’s Seminar Series and 11th Annual Buckeye Reunion Under the Stars

2008 Football Season Tailgates
Tailgates begin 3 hours prior to kick off at Hitchcock Hall. The buffet is $10 per person and free for children under 12.

• September 6th: OSU vs. Ohio University

• November 22nd: OSU vs. Michigan
Some examples of end applications include: earthquake simulation, simulation of turbulence, computational fluid dynamics and cosmological simulations.

Each year, the supercomputing community lists the top 500 most powerful supercomputers in the world. MVAPICH is enabling large-scale InfiniBand clusters to obtain TOP500 supercomputer rankings during the last several years. The latest November 2007 ranking includes several top-ranked supercomputers utilizing MVAPICH including the 3rd most powerful system (14,336 cores), at the New Mexico Computing Applications Center in Rio Rancho, New Mexico. This system is utilized for real needs in New Mexico, including water conservation in renewable energy. MVAPICH is also used on the 22nd (5,848 cores) and 29th (9,216 cores) ranked supercomputers, at the Texas Advanced Computing Center at the University of Texas (TACC) and Lawrence Livermore National Labs (LLNL), respectively. TACC has deployed the largest InfiniBand cluster in the world, with a 62,976-core cluster, to deliver 504 TFlops.

During the design of these software libraries, Panda and his team also observed that there is no standard for measuring performance of MPI libraries across various parallel systems and networks in an objective manner. They introduced a set of micro-benchmarks to alleviate this problem. These benchmarks were made available to the HPC community as a micro-benchmark suite in an open-source manner (as a part of the MVAPICH/MVAPICH2 library and also as an independent package). This benchmark-suite is widely used in the HPC community – vendors to users. This package has been popularly known as the “OSU Benchmarks” package. As networking technologies are evolving with new features, new micro-benchmarks are being added to this benchmark-suite.

MVAPICH is widely used. It has been downloaded more than 18,000 times from the OSU website directly. It is also distributed in the software stacks of major InfiniBand vendors, server vendors and Linux distributors. The list of organizations using this software and the large number of news articles and press releases from all over the world citing the impact of this research can be found at http://mvapich.cse.ohio-state.edu.

Panda’s research is currently funded by the National Science Foundation, Department of Energy, Mellanox, QLogic, Sun Microsystems, Ohio Department of Development and the Ohio Board of Regents. His group has received several best paper awards in recent years, including papers at the International Cluster Computing Conference and the International Parallel and Distributed Processing Symposium. More information regarding this and other projects can be found at http://nowlab.cse.ohio-state.edu/.

VisWeek 2008 is the premier forum for data and information visualization advances for academia, government, and industry. This event, to be held in Columbus, October 19-24, will bring together researchers and practitioners with a shared interest in tools, techniques, and technology. VisWeek 2008 includes the two conferences — IEEE Visualization and IEEE InfoVis — as well as a symposium, namely on Visual Analytics Science and Technology (VAST). The year 2008 marks the holding of the 19th conference of IEEE Visualization and will celebrate the maturing of an established discipline. This year, Raghu Machiraju and Roger Crawfis serve as conference chairs and Han-Wei Shen serves as a program chair.
Dino Farinacci - cisco Fellow
Returns to his Ole Stomping Ground

Dino Farinacci received his BS degree in Computer and Information Science from the College of Arts and Sciences in 1981. Since then, he has put fundamental skills he learned at Ohio State to work over his 27 year career in Computer Networking. Dino has been instrumental in building Internet infrastructure products since he graduated with a major in CIS and a minor in Mathematics. He has become an insatiable Software Engineer and, to date, still writes networking code. His specialization has been in network protocols which execute in routers so they can route packets across the Internet. Dino has designed, developed, and tested unicast and multicast protocols for most of his career. He has been a member of the IETF, making large contributions to Internet Standards since 1989.

When Dino graduated from Ohio State he moved to Maryland to work as a Systems Analyst for the Department of Defense. He started his career working on large mainframe computer operating systems. He quickly took a liking to CDC and super-computers when he left the government for private industry to join Control Data Corporation. He moved to San Jose, California to transition into a development role to spend more time “writing code.” This is when his career in networking sprung loose. Shortly after CDC, Dino stopped by 3Com Corporation to build a small enterprise-class router on his way to cisco Systems in the early 90s.

Dino became one of cisco’s first fellows in 1997. To this day, Dino continues to build networking equipment and design networking protocols. Currently, he is designing a next-generation Data Center class switch/router with a new state-of-the-art modular operating system. At the same time, Dino is doing volunteer work to help scale the Internet to a next generation architecture by introducing a level of indirection separating the semantics of identity and location from an IP address.

Dino made a visit to Ohio State in the fall of 2006 for his first visit since graduating to recruit for cisco at the OSU Engineering College Fair. He returned in 2007 to get back to his roots and plans on returning each fall. Next time you go to the college fair at the French Field House, stop by the cisco booth and say hello to Dino. The first person who makes a reference to this article will receive a complementary cisco T-shirt.

Shivnandan (Shiv) Kaushik Named Intel Fellow

Shiv Kaushik, PhD ’95, Software and Solutions Group, Director, Systems Software, has been named an Intel Fellow. Intel Fellows are selected for their technical leadership and outstanding contributions to the company and industry. Kaushik directs work on the definition and optimization of platform and firmware interfaces to operating systems and core virtualization software.

Kaushik joined Intel in 1995 as a senior software engineer and has served in a number of software engineering and management roles. He is an expert in the design of platform hardware and firmware interfaces to operating systems and virtualization software. In this role, he has made optimizations for features introduced on Intel processors since the Pentium Pro and contributions to industry standard firmware specifications. Kaushik holds 12 patents with 29 patents pending in the areas of system software and platform architecture. He has received three Intel Achievement Awards.
Two CSE Alums Receive NSF CAREER Awards

Nigamanth Sridhar, PhD ’04, is an Assistant Professor in the Department of Electrical and Computer Engineering at Cleveland State University. His primary areas of research interests lie at the intersection of Software Engineering and Distributed Systems, with a special emphasis on small embedded systems such as wireless sensor networks. Sridhar directs the Dependable Systems and Networks Research Group, which is focused on making programming of sensor systems more accessible to scientists and researchers outside the field of Computer Science. Sridhar received his PhD (2004) and MS (2000) degrees in Computer Science and Engineering from The Ohio State University, and an MSc (Tech.) (1997) degree in Information Systems from Birla Institute of Technology and Science, Pilani, India.

An In-network Collaboration and Coordination Framework for Wireless Sensor Actor Networks

Murat Demirbas, PhD ’04, is an Assistant Professor in the Computer Science and Engineering Department of SUNY Buffalo. He directs the UBComp Lab, University of Buffalo Ubiquitous Computing Lab. His main research interests are in the areas of wireless sensor networks and distributed algorithms, focusing on developing robust and resilient distributed wireless sensor network services and applications. Demirbas received PhD (2004) and MS (2000) degrees in Computer Science and Engineering from The Ohio State University, and a BS (1997) degree from Middle East Technical University, Ankara, Turkey. Upon receiving his PhD from OSU, Dr. Demirbas was a post-doctoral researcher at MIT.

Friend of the CSE Department, Dennis Frailey, receives SIGCSE Award for Lifetime Service

Dennis Frailey is a Principal Fellow at Raytheon Company in Plano, Texas and an Adjunct Professor of Computer Science and Computer Engineering at Southern Methodist University (SMU). Frailey has provided considerable, personal and hands-on help to the OSU CSE program, despite the long distance between Columbus, Ohio and Dallas, Texas, where he lives. He has supported scholarships for our students, served as a guest lecturer on an annual basis for several years, and worked with our faculty to help guide curriculum and project efforts. This highly positive relationship has helped CSE to improve our program and resulted in our faculty and students voting him a special Chair’s Award for excellent service to CSE. This award has only been given four times in the eleven year history of the department’s award program.

At Raytheon, Frailey is a leader in software engineering improvement, currently focusing on software measurement and cycle time reduction. He is also an instructor in several internal courses for project managers and software managers. Prior assignments include software project manager, computer architect, operating system designer, compiler designer, and speechwriter for company executives. Dennis previously worked at Texas Instruments, the Ford Motor Company, and as a tenured, Associate Professor at SMU. He helped start the software engineering program at SMU, and was vice-chair of the ACM/IEEE Software Engineering Coordinating Committee. Frailey is an ABET accreditation evaluator in computer science, computer engineering and software engineering; a former member of the Computer Science Accreditation board of directors; and former ACM vice president. He is currently a member of the IEEE Computer Society’s Professional Practices Committee and was recently elected vice-chair of the Industry Advisory Committee to the Texas Board of Professional Engineers. He holds an MS and PhD in computer science (Purdue) and a BS in mathematics (Notre Dame).
Mustafa Thamer, (MS ’91) currently works at Firaxis Games in Hunt Valley, MD, making great strategy games for PC and consoles. He was the lead programmer on Sid Meier’s Civilization IV which garnered the GameSpy PC Game of the Year award for 2005, and is currently the lead programmer on Civilization Revolution, due this spring on Xbox 360, PlayStation 3 and Nintendo DS. He is married and has 2 children: Zachary and Hana.

**After Otto C. Juelich** (PhD ’75) graduated, he returned to his employer, Rockwell International, to work as a Research Specialist, continuing in that position until 1983. He then became the Columbus representative of Rockwell’s Information Systems Center (based in Seal Beach, CA) until Rockwell closed the Columbus operation in 1989. He then retired from Rockwell into volunteer work: assisting in, and sometimes running, the computer lab at the Columbus Literacy Council. He still volunteers there. He also teaches English to speakers of other languages at the Jewish Community Center.

From 1990 to 2001 he served as secretary of COCACM, the Central Ohio Chapter of the ACM, and from 2001 to 2007 as its treasurer. Currently he edits their newsletter, the “Data Channel.” He urges all CSE faculty, staff, students, and alumni who benefit from ACM to become active in COCACM.

Andy Griffith, (MSCS ’73) lives in Newburyport, Massachusetts and loves being about 7 miles from the ocean. He has stayed an OSU fan, in particular football. He had a hard time last Winter as his son is a graduate of University of Florida.

**Dave Brown** (PhD ’84) is a Professor of Computer Science at WPI (Worcester, MA). After a double bypass a few years ago, he is now avoiding 12-hour work days, and stress, while still acting as the Editor in Chief of the CUP journal, AI EDAM: Artificial Intelligence for Engineering Design Analysis, and Manufacturing. For the last 20 years, he has been the WPI Fencing club coach. In his spare time, he tries to get out and about to hear early music, blues and jazz, and stay in to watch all those British detective shows (sometimes translating for others).

**Golden G. Richard III** (MS ’91, PhD ’95) is a Full Professor in the Department of Computer Science at the University of New Orleans, where he was hired in 1994. He heads the Computer Security Group and specializes in digital forensics. He lives with his wife and two year old son in the Garden District.

**David Bailey** (CIS ’73) is living in Stevensville, Michigan and retired from Whirlpool Corporation as director of information technology.

**Timothy Ehrle** (CIS ’77) is senior manager of CAD Global Infrastructure at Advanced Micro Devices in Austin, Texas.

**Michael McNally** (CSE ’01) is a patent examiner at the U.S. Patent and Trademark Office and resides in Virginia with his wife, Kerry (ECE ’01).

**David Ogle** PhD ’88 pictured with two of his triplets while visiting Ohio State. David joined IBM in 1989 as a member of the Experimental Systems Department worked in the network and application design for the 1998 and 2000 Olympics.
Jerry L. Canterbury (BS ’87) is a Senior Managing Consultant and Project Manager for IBM. He received his MBA from the University of Georgia. Jerry received the 1998 William Oxley Thompson Award from The Ohio State University Alumni Association for early career achievement and received the “Best Buckeye” Award from the Ohio State University Alumni Association for contributions to OSU alumni clubs.

He has been married to fellow OSU graduate Nancy Houston Canterbury for over 20 years. They enjoy travel, having vacationed to all seven continents. Jerry also participates as a member of The OSU Alumni Band at the alumni game nearly every year. The photo above is taken at the Pyramids of Gaza in April.

Doug Roble Receives his Second Oscar Nod

For a second time, Dr. Doug Roble has heard his name spoken by a representative of the Academy of Motion Picture Arts and Sciences. On Feb. 9th, 2008, Dr. Roble received a Scientific and Engineering Award (Academy Plaque) for his development of the fluid simulation system at Digital Domain. This work, done in collaboration with Nafees Bin Zafar and Ryo Sakaguchi, is an "influential and flexible production-proven system (which) incorporates innovative algorithms and refined adaptations of published methods to achieve large-scale water effects." You can see examples of Doug’s work in the "Pirates of Caribbean Series." When the Washington Post asked Dr. Roble what contributed to this honor, he replied, "I'd like to thank the fluid community."

Doug first received recognition from the Academy in 1998 (presented in 1999), when he received a Technical Achievement Award (Academy Certificate) for his contribution to tracking technology and for the design and implementation of the TRACK system for camera position calculation and scene reconstruction. As stated on the Academy's website, "the TRACK system is an integrated software tool that uses computer-vision techniques to extract critical 2D and 3D information about a scene and the camera used to film it." OSU-CSE was particularly proud of this award to Roble; this work was derived from research he had started in his doctoral dissertation.

At Digital Domain, Dr. Roble is the Creative Director of Software. In service to the greater graphics technology community, he is Chief Editor of the Journal of Graphics Tools and is on several panels and committees of SIGGRAPH, the most prestigious computer graphics conference, including its Advisory Board. He has given invited lectures and keynote addresses at many major conferences, most recently at the Annual Meeting of the American Association for the Advancement of Science in 2007. In 2002, he received the Distinguished Alumnus Award from OSU’s College of Engineering. Dr. Roble was a student of Dr. Rick Parent and received his Ph.D. in 1992 after receiving his Masters in 1987. Doug resides in California with his wife and fellow alum, Dr. Deborah Shands. His upcoming work will be featured in Speed Racer, The Curious Case of Benjamin Buttons and The Mummy: Tomb of the Dragon Emperor.

Fawzi Gherfal (PhD ’85) and Ahmed Elmagarmid (PhD ’85) returning to CSE for a visit. Fawzi currently lives and works in Libya and Ahmed is a Professor at Purdue University.

Karan Singh (PhD ’95) is an Associate Professor of Computer Science at the University of Toronto, where he co-directs the graphics and HCI lab DGP (Dynamic Graphics Project). His research interests include geometric design, character animation, artistic perception and representation of shape and 3D interaction interfaces. He received his B.S in Computer Science from the Indian Institute of Technology, Madras in 1991 and MS and PhD from Ohio State University in 1992 and 1995. He was a researcher at Alias Inc. from 1995-1999 where he designed and developed character and facial animation tools for Maya ver.1.0 and was involved with the design and implementation of conceptual design and reverse engineering software at Parafarm Inc. 1999-2001. He was the Software R+D Director for the Oscar winning animated short film Ryan in 2004.
Brian Shannahan has been awarded a two year Department of Defense SMART Fellowship. His work with the US Air Force Research Laboratory tackles Computational Fluid Dynamics, or CFD. CFD simulations are used in fluid flow problems; Brian’s focus is on identifying vortices in a given CFD solution. The problem is that CFD simulations are not perfect - it isn’t possible to simulate every individual fluid molecule, so approximations are used to simulate small discrete regions of flow. This results in data that contain noise and inaccuracies. Currently, his research focuses on finding robust statistical methods that resist problems caused by noise and outliers, and applying those methods to the problem of analyzing CFD solutions.

The SMART Fellowship was established to help maintain America’s technological edge and to encourage research careers related to national defense.

Students in Rajiv Ramnath’s CSE Capstone Design Course have a unique opportunity to gain real world experience, while utilizing the knowledge they have acquired in their previous software and software engineering courses. Students are required to solve industry – specific problems presented from local businesses and non-profit organizations.

Students work in groups to design the system over the course of the quarter and then give two presentations attended by the local industry representatives and submit a final paper of the results. The industry representatives also provide 20 to 25 hours of mentorship during the quarter. The cumulative result is a poster presentation at the end of the quarter, attended by industry, where each group presents their system.

Ramnath has received positive responses from both industry and students about their experience. Some companies have asked to continue the project after the course has ended. Students report that the course gives them an edge in interviewing for their first post-degree job.

Many local organizations have called upon the talent of CSE undergrads to help solve their software problems. These include large businesses such as Mettler-Toledo, Motorola Inc., NCR, OSU Medical Center, OSU departments such as Industrial and Systems Engineering, Sociology, Geography, the Glenn School of Public Affairs, and Special Education and Literacy, non-profits such as Engineers for Community Service and several entrepreneurs looking to build a demonstrable prototype, have used the services of this class.
Congratulations to CSE Autumn and Winter quarter graduates!

The Department wishes you the best of luck in your future endeavors.

**Bachelor’s CIS**
- Jason Barrat
- Shain Bergman
- Michael Bongomo
- Matthew Brand
- Adam Crompton
- Zachary Evans
- Jeremiah Fincher
- Bharti Gupta
- Joseph Handzel
- Fouad Issac
- Chassity Phelps
- Aaron Pikkarainen
- Kevin Toomey

**PhD**
- Fatih Altiparmak
- Bonny Banerjee
- Gregory Buehrer
- Sriram Chellappan
- Xiaoyang Gao
- Lei Guo
- Sriram Krishnamoorthy
- Unmesh Kurup
- Liya Li
- Ozgur Ozturk
- Vinay Sharma
- Yang Shao
- Laura Stoia
- Sayantan Sur
- Abhinav Vishnu
- Chao Wang

**Bachelor’s CSE**
- George Barsa
- Matthew Bird
- Brian Burkhart
- Hee Yong Chae
- Chris Changchien
- Jared Coliadis
- Derek Driver
- Eric Egnot
- Alan Files
- Christopher Hartley
- Michael Henretty
- Christopher Hirgelt
- Jeffery Holland
- David Johnson
- Matthew Johnson
- Essam Kailini
- Kevin Knox
- Wee Lai
- Brian Martin
- Jeffrey McCune
- Stuart McKinney
- Kunal Nath
- Jonathan Ou-Yang
- Rishiram Phalgoo
- Lawrence Samantha
- Chase Schueler
- John Slemmer
- Timothy Sprague
- Michael Tam

**Master’s**
- Khushbu Agarwal
- Tan Apaydin
- Sitaram Asur
- Uday Bondhugula
- Hui Cao
- Lei Chai
- Yisheng Chen
- Kai-Wei Fan
- Wenjun Gu
- Jingjing He
- Wei Huang
- Mohammad Islam
- Guarav Khanna
- Yipeng Li
- Qingda Lu
- Sundeep Narravula
- Rajkiran Panuganti
- Aleksandar Pantaleev
- Yang Shao
- Guoqiang Shu
- Shirish Tatikonda
- Duygu Ucar

Graduate student Joshua A. Levine has received the Best Student Technical Poster award for joint work with his advisor Professor Tamal K. Dey at the 16th International Meshing Roundtable (2007) in Seattle, WA. The poster was presented concurrently with the paper *A Practical Delaunay Meshing Algorithm for a Large Class of Domains*. This is the third time (past: 2002, 2005) that a member of the Jyamiti group has won a poster award at IMR.

This work continues the group’s research on meshing of piecewise smooth complexes using Delaunay refinement. This class of shapes includes almost every 3D object commonly manipulated on computers: smooth surfaces, CAD models, non-manifolds, shapes with small angles, and the volumes contained within. The novelties of the approach include a practical algorithm with provable guarantees on capturing the topology and geometry of the shape. This algorithm has been implemented and the software DelPSC is freely available for non-commercial use.

Laura Stoia, PhD ’07 is hooded by her advisor, Donna Byron at autumn commencement. In January, Laura joined Google, in Mountain View, California, as a software engineer. Her area of study was Artificial Intelligence, focusing on computational linguistics.
Yusu Wang Receives NSF CAREER Award

The National Science Foundation has awarded Yusu Wang a prestigious NSF CAREER Award for her research entitled Geometric and Topological Methods in Shape Analysis, with Applications in Molecular Biology.

Her project will focus on shape characterization and matching in molecular biology. It is generally believed that the functionalities of proteins are largely determined by their three dimensional structures. Hence understanding molecular functionality, a task essential to fundamental biological problems such as protein folding and drug design, depends on precise analysis of molecular structures. However, while much success has been achieved in molecular sequence analysis, success on the structural side is more limited, to a large degree due to a lack of accurate and efficient characterization and matching algorithms. To address these challenges, this project focuses on shape characterization and matching using geometric and topological methods, with driving applications coming from molecular shape analysis. In particular, it will investigate the fundamental issues in molecular shape matching and characterization, study the mathematical structure behind these problems, and develop practical algorithms that are also theoretically sound. By developing effective computational frameworks for manipulating and processing various geometric shapes, this project provides an important step towards large-scale molecular structural analysis, which is essential to understanding life at the molecular level. At the same time, this multi-disciplinary project helps to broaden the scope of theoretically sound computational methods for real-life problems, as well as to further bridge computer science, mathematics, and structural biology.

Wang received her MS and PhD degree from Duke University in 2000 and 2004, respectively, and B.S. degree from Tsinghua University in 1998. Before joining OSU, she was a post-doctoral researcher at the Geometric Computing lab at Stanford University from 2004-2005. She received the Department of Energy Early Career Award in 2006.

This is the 20th NSF CAREER award for the CSE Department.

IEEE Honors Professor Liu

Ming-Tsan (Mike) Liu has been honored by the IEEE Computer Society for his long term research and service to the organization. The IEEE Computer Society Technical Committee on Distributed Computing presented him with the Distinguished Achievement Award and a Special Presidential Award.

DeLiang Wang Receives Helmholtz Award

The International Neural Network Society (INNS) has awarded DeLiang Wang the 2008 Helmholtz Award for his contributions in sensation and perception. The INNS awards program annually recognizes up to three individuals in the field of neural networks who have made outstanding contributions in biological learning, sensation/perception, or engineering/application. Wang will receive his award at the 2008 World Congress on Computational Intelligence, to be held in Hong Kong, June 1-6.

DK Panda Honored as IEEE Fellow

IEEE has bestowed the honor of IEEE Fellow to Dhabaleswar (DK) Panda for contributions to high performance and scalable communication in parallel and high-end computing systems. To the left, Panda receives his award from Professor H.J. Siegel from Colorado State University at IPDPS ’08 in Miami, Florida.
Tamal Dey has been newly elected to the executive board of the Solid Modeling Association for the period 2008-2010. This board represents the solid modeling community and oversees the organization of the annual ACM Symposium on Solid Modeling among other things. He is also serving on the editorial board for Transactions on Computational Science.

Jim Davis received an equipment grant from the Ohio Department of Development for a joint effort with the Institute for Sensing Systems. The grant supports the Development and Commercialization of Advanced Sensor Technology.

Nasko Rountev is serving on the editorial board of the International Journal of Information and Software Technology. He and PhD student Jason Sawin’s paper Improved Static Resolution of Dynamic Class Loading in Java was selected as one of the best papers at IEEE International Working Conference on Source Code Analysis and Manipulation.

Rajiv Ramnath, in collaboration with the Georgia Institute of Technology, received an equipment grant from IBM. The collaboration is an initiative to develop new autonomic technology for cloud computing. The effort is aimed at developing future technologies and training IT professionals required to enhance the performance and energy usage of computing applications while increasing productivity in the workplace. The project focuses on self-managing features for virtualized data centers in a cloud computing environment. This new project includes the creation of a prototype computing cloud that links data centers from the two institutions, called the Critical Enterprise Cloud Computing Services (CECCS) facility. Virtualized data centers give organizations the ability to do more with fewer resources by optimizing the use of software, computing hardware and storage, and network infrastructure by sharing not only across departments but also across different physical locations. Cloud computing allows corporate data centers to operate more like the Internet by enabling computing across a distributed, globally accessible fabric of resources, rather than simply depending upon local machines or remote server farms.

Eric Fosler-Lussier and Mary Beckman, from the OSU Linguistics Department, have received a National Science Foundation grant entitled DHB/Collaborative Research: Using Machine Learning to Model the Interplay of Production Dynamics and Perception Dynamics in Phonological Acquisition.

DeLiang Wang has received a four year Air Force Office of Scientific Research award entitled Sequential Organization and Room Reverberation in Speech Segregation.

Xiaodong Zhang currently serves as a co-chair for WWW ’08. He gave a keynote presentation at the 13th International Conference on Parallel and Distributed Systems last December in Taiwan.

Ness Shroff will lead a seven institution, five year MURI effort funded by the Army Research Office entitled Stochastic Control of Multi-scale Networks. He currently serves as Co-chair of MobiHoc ’08.

Anish Arora received an equipment grant from Sun Microsystems Laboratories and Project SunSPOT for his work entitled A SunSPOT Mini-array for the Kansei Wireless Sensor Network Testbed at Ohio State.

Raghu Machiraju, along with Roger Crawfis, will serve as conference chairs for IEEE Vis ’08, to be held in Columbus from October 19-24. For more information, visit http://vis.computer.org/VisWeek2008/index.html.

DK Panda received a one year grant from Mellanox Technologies, Inc. for Research on high performance and scalable MPI over InfiniBand. He also received funding from SUN Microsystems for his work in MPI over InfiniBand. This year, he will serve as a program chair for Supercomputing ’08 and the Symposium on Architecture for Networking and Communications Systems ’08.
NEWPATH: Nurturing through Entrepreneurship, IT World Leaders

Undergraduate students now have a unique opportunity to hone both their technical and their entrepreneurial skills, thanks to a grant from the National Science Foundation. Undergraduates are recruited in their freshman and sophomore years to take part in this unique program. The NEWPATH program is designed to give engineering students the opportunity to experience the process of establishing an IT start-up company and to nurture future IT world leaders. In this program, the students will work with a myriad of professionals to create their own IT start-up companies.

In addition to faculty mentors, each student will have an industry mentor, a volunteer from the staff or an affiliate company of TechColumbus. TechColumbus is a local organization that offers a full range of technology and entrepreneurial services including advice through pre-seed funding, access to venture capital and incubation space. In addition, an entrepreneurship training program for NEWPATH students will be introduced through internships in high-tech IT start-ups. The internships help to enhance collaboration between the project personnel and the staff from TechColumbus. Lastly, an E-Practicum gives students a unique opportunity to apply their knowledge and skills - in IT and its applications, as well as in entrepreneurship - to run real start-ups. They go through planning, market search, fund raising, business management, research and development management, product development phases, marketing, customer relations and sales for the creation and operation of their small IT venture. As in usual start-ups, the students own a substantial number of company shares.

The NEWPATH community has been built at and around OSU. It consists of faculty from the CSE and ECE Departments, the Fisher College of Business Center for Entrepreneurship, TechColumbus and other key members of the Central Ohio IT industry community.

According to David Lee, Director of the NEWPATH initiative, “NEWPATH has the potential to impact the nature of undergraduate computing education nationwide, especially with respect to preparing students to be entrepreneurial leaders. NEWPATH is also likely to rewrite the level and intensity of cooperation between industries and universities in the area of business and entrepreneurship education in the IT arena.” In addition he states, “when they graduate, no matter if they have run a successful business or not, they will gain a unique experience for their career development and possibly becoming future IT world leaders.”

Some of the NEWPATH Participants:
Front Row: CSE faculty Neelam Soundarajan, Andrew Kane, Shengying Shen, Hung Nguyen and CSE faculty David Lee
Back Row: Sean Thomas, Ben Tarney, Peter Koelsch, Rob Snider and CSE Faculty Rajiv Ramnath
When Marty Marlatt moved to Columbus from Newcomerstown, Ohio, she wasn’t interested in working for OSU. It was too big and confusing for a small town girl. Instead, she found a job at Industrial Nucleonics (IN)/AccuRay. After three years at IN, they downsized and she took a job at a safety equipment distributor. She worked for them for nearly a year and came to really dislike the position. After being encouraged by a customer to look at OSU for employment, she took the civil service test, interviewed with Computer Science and the rest is history. By the way, in 1974 there weren’t any computers and the science was all in the faculty offices!

Marty worked hard, treated people with respect and humor. She loved her job, the faculty, the students and the fellow staff members. She took on many different tasks in the CIS Department (before it was CSE). That’s not my job was not in her job description. If it needed done, Marty did it.

If there was a bat or possum to chase out of the building, Marty was there. If there was a rally for staff support and recognition, she was there. If there was a softball team (the WYSIWYG’s), she was there – never mind that she couldn’t run or throw. Or even bat well outside of practice! If there was a men’s room to convert to a ladies’ room, Marty was part of that too. Silliness prevailed some days. Hard work on others. How can I help? What can I do? Surely there’s a better way to accomplish this. We can do this! All part of Marty’s philosophy.

Marty saw faculty, staff and students come and go for various reasons. “I felt sad as I watched friends go – for better positions or through graduation” she said. “I reminded myself that OSU’s mission was to accept and educate people, and then send them off to better themselves and the world. But it didn’t make it any easier as I said goodbye.”

Marty further notes, “How could I have known that upon my announcement of retiring, those same sentiments are coming back to me two-fold. Little did I know that all those people that impacted me in so many different ways over the years, felt impacted by me and what I did.”

“As I step away from what I’ve known and loved to a new beginning in retirement, let me say that I take many wonderful memories – and friends – with me. Thank you to each of you for making the last 33 years the time of my life.”

Elizabeth O’Neill moved from Garrett, Kentucky to Columbus at a young age and remained in Columbus all her life. After working at Gold Circle in the advertising department (assembling ads and preparing copy for typesetting), she arrived at OSU in 1975 to work as a technical typist in the Department of Chemistry. In 1980, Elizabeth came to the Computer Science Department to work as a secretary to Dr. David Hsiao who was a faculty member and Editor-in-Chief of the ACM Transactions on Database Systems. In addition, she worked with Dr. Tse Feng, also a faculty member and Editor-in-Chief of the IEEE Transactions on Computers.

In 1986, Elizabeth took a position as the chairperson’s secretary for the Department of English. She stayed there for almost two years. Dr. Mike Liu requested that she return to Computer Science as his secretary (which she did) since he’d recently become the Editor-in-Chief of the IEEE Transactions on Computers. Not only did the faculty appreciate Elizabeth’s expertise and contributions to the journal, the IEEE also recognized her efforts by awarding her the IEEE Appreciation Award for Outstanding Service in 1988.

Elizabeth’s career went in another direction in the ’90s when she took over the Graduate Secretary position in the Computer Science Department. In this position, Elizabeth was responsible for assisting graduate students with the various rules, regulations, and paperwork to help them achieve their goal of graduating. In addition, she opened, sorted, and logged in literally thousands of graduate student applications to the department over the years. One momentous year saw over 1,500 applications cross her desk!

In October 2007, Elizabeth decided it was time to retire and take up other pursuits, among them being with her grandchildren that she so dearly loves. Congratulations to Elizabeth on your retirement and your many years of service, not only to OSU, but to the department. The faculty, staff, and students will miss your expertise, competency and humor.
Remember When?  This photo of LAIR, Laboratory for Intelligence Research, was taken in 1989. Can you match the names with the faces? E-mail us at alumni@cse.ohio-state.edu, the person with the most correct answers will win a prize! Answers will be posted in the following newsletter.

Dean Allemang, Tom Bylander, B. Chandrasekaran, Matthew DeJongh, Elizabeth Fannin, Olivier Fischer, Richard Fox, Ashok Goel, Dave Herman, Kathy Johnson, Todd Johnson, John Josephson, Susan Josephson, Anne Keuneke, Dale Moberg, Gayle Northrup, Jordan Pollack, William Punch, Diana Smetters, Jack Smith, Michael Tanner, Michael Weintraub, Arun Welch, Cindy Sergent, Wendy Cooke and Beverly Mullet

Congratulations to the winners of our Remember When? contest. Edward Cohen (MS 1973, PhD 1978) had the most correct answers and Ruth Smilan (BA 1972, MS 1976) was the first response. The answers are below. This photo of computer science faculty and staff was taken in 1974.


Back Half: Don Kalmey, Mike Liu, Doug Kerr, Dan Moore, John Klippert, Tom DeLutis, Ernie Staveley, Cee Taylor, Tony Lucido, Clint Foulk, Tony Petrarca, Bill Buttlemann, Ron Ernst, Jerry Rothstein
Many Thanks to Our Alumni and Friends!

We appreciate the following alumni/ae, faculty, staff and friends who directed their Ohio State gifts to the Computer Science and Engineering Department. Listed below are our benefactors over the past 6 months. These donations are making a difference. Private support can help us to attract outstanding students and promising young faculty. We have used gift dollars to improve research and teaching labs, as well.

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