The College of Science and Engineering (CSE) Alumni Society provides inspiration for current students and gives them something to strive for in their careers. We encourage you to visit the department’s alumni Web page, and participate in the various programs and activities offered through the Graduate Student and Undergraduate Research Opportunities Program (GSRUP) and with regular symposiums on software development. CS&E is also a co-sponsor of the Twin Cities Software Process Improvement Network (Twin-SPIN).

The department has an advisory council consisting of local industry representatives, called the Computer Science Associates (CSA). The CSA group advises and supports the CSE department head by helping to identify the needs of local businesses, industry, citizens, and society to relate to the CSA. The group also critiques department plans and programs, supports new department initiatives within the University, business community and beyond, and promotes the CSE department and its programs within the community.

To learn more about your company can become more involved in the CSE-department please send an e-mail to:

industry_relations@cs.umn.edu

ASSOCIATE DEAN

Vipin Kumar

612-625-4002, hp@cs.umn.edu

Master of Science in Software Engineering (M.S.S.E.)

The College of Science and Engineering (CSE) Alumni Society sponsors events, both past and future students, as well as the interests of the college. CSE is the Academy of Excellence—created and fostered by alumni, faculty, and friends of the department—continues to flourish.

To find out more about the CSE Alumni Society, visit

www.cs.umn.edu/alumni/central/csealumni

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The department also works to strengthen ties to industry through the Undergraduate Research Opportunities Program and through the Software Program. The department also works to strengthen ties to industry through the Undergraduate Research Opportunities Program and through the Software Program.

The graduate program offers the degrees of Master of Computer Science (M.C.S.), Master of Science in Software Engineering (M.S.S.E.), Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in Computer Science. More than 400 graduate students and undergraduate minors are offered through the Department of Electrical and Computer Engineering.

The CS&E newsletter, Soundbyte, highlights faculty research, student and faculty accomplishments, department and alumni news, as well as CSE alumni donors. To see our latest alumni, visit our website www.cs.umn.edu or email the newsletter@cs.umn.edu and keep us informed of your promotions and accomplishments.

Staying Connected

The Computer Science and Engineering Department’s tradition of excellence—created and fostered by alumni, faculty, and friends of the department—continues to flourish.

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The University of Minnesota is an equal opportunity educator and employer. This publication is available in alternative formats upon request. Call Communications Coordinator at 612-625-3133 for disability accommodations.
The University of Minnesota’s Department of Computer Science and Engineering (CS&E) has 56 faculty members who work on a broad range of topics and supervise 400 undergraduate majors, and nearly 400 graduate students. Our faculty members are highly productive researchers and educators. They are international leaders in their respective fields and authors of widely used software and textbooks. The distinction of our faculty locally and worldwide is confirmed by their long list of awards and honors in research and teaching.

CS&E provides students with a broad undergraduate and graduate curriculum, based upon the application and theoretical foundations of computer science, and on the development of research through the University awards approximately 100 bachelor’s, 120 masters, and 20 doctoral degrees in Computer Science. Our faculty and students participate in interdisciplinary research with groups like the Institute for Health Informatics, the Minnesota Population Center, and the Biomedical Informatics and Computational Biology program. We are located in the vibrant and dynamic university which offers dozens of student and campus organizations to suit the needs and interests of our students.

The combination of all of these elements makes CS&E an About the Department source of problems, data sets, and experience for students. It draws connections with industry and national labs, providing a rich spectrum of computing. Research funding has increased significantly over the past 10 years, including large awards such as the NSF Expeditions in Computing. Faculty research productivity and impact are high, with recent Top 10 rankings from The Chronicles of Higher Education. Many of our faculty are active participants in the research communities, and serve on advisory boards and scientific committees, and have been invited to give presentations to challenge public health, biosecurity and other areas.

HIGH PERFORMANCE COMPUTING

B. Yeganeh, K. Yarmarkazi, J. Weissman, Z. Zhang

This research group focuses on the development of novel algorithms for extremum and pattern detection, decision making, querying, and spatial data analysis. This research is evidenced by the variety of a domain of database, such as bioinformatics, cyber security, global climate data analysis, sensor networks, information, and the Web. This group has extensive collaborations with a variety of government organizations, private industry, and research institutions. Many of faculty members in the software engineering research area are part of the University of Minnesota Software Engineering Institute, which is funded by the National Science Foundation. These two focus areas are synergistic, as new languages are developed to support the needs of new systems and software. Quality. Many of faculty members in the software engineering research area are part of the University of Minnesota Software Engineering Institute (UMSEI), which integrates software engineering education, research, and practice. The center promotes dissemination of state-of-the-art software engineering methodologies among practitioners in industry, and encourages industry involvement in the center’s research.

NETWORKS, SYSTEMS, SECURITY & CLOUD COMPUTING


The HPC group focuses on collaborative and social computing systems that help people solve problems in parallel. We explore the ways computer tools enable collective intelligence in groups as small as two or as large as all of Wikipedia.

We draw upon and conduct studies of individual and collective behavior to guide the creation of novel algorithms, interaction techniques, and user experiences. Our current projects include personal and pass-isntanting systems, virtual environments, producing community artifacts, knowledge-sharing systems for communities, and social software that supports cross-disciplinary, collaborative disciplines, systems that help meet pressing challenges in public health, biosecurity and other areas.

ABOUT THE DEPARTMENT

RESEARCH

ARCHITECTURES & COMPILERS

P. Yeh, A. Zhao

Computer architecture and compiler researchers target primarily on high performance computing and algorithms. These systems are the focus of our architecture and compiler support for speculative thread execution, high-performance memory system, and parallel algorithm design, performance analysis, and applications in high-performance computing.

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THEORETICAL FOUNDATIONS


Theoretical foundations research encompasses a broad range of fundamental topics in computer science, including computational complexity, automata theory, graph theory and network design, geometric computing, cryptography, computational logic, and programming languages theory. Several groups are also actively engaged in leveraging their research into other research application areas.

SOFTWARE ENGINEERING & PROGRAMMING LANGUAGES

M. Heimdahl, G. Nadathur, E. van Wyk

Research in software engineering and programming languages focuses on two main themes: developing tools and techniques to improve the quality of computer systems, and advancing the state-of-the-art in software deployment; and designing and implementing new frameworks and formalizations for expressing solutions to computational problems. These two focus areas are synergistic, as new languages are usually designed to solve specific problems of quality. Many of faculty members in the software engineering research area are part of the University of Minnesota Software Engineering Institute (UMSEI), which integrates software engineering education, research, and practice. The center promotes dissemination of state-of-the-art software engineering methodologies among practitioners in industry, and encourages industry involvement in the center’s research.