Computer Science

College of Science and Mathematics

Department of Computer Science
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B.S. in Computer Science

M.S. in Computer Science

Minor in Computer Science

The Department

Computer science is applied reasoning using both art and science: It requires the ability to communicate ideas through a combination of language and powerful technology. It is concerned with the interaction of humans and computers, as well as the application of computers to a myriad of specialized problems.

Program Description

The goal of the Department of Computer Science is to offer programs to a diverse audience: (1) students interested primarily in computing, (2) students interested primarily in applying computing to some other field of study, and (3) students who wish to include computing as part of their general education.

Career Opportunities

Computer use pervades our society, and the industry supporting that use has grown rapidly. Graduates from this program find job opportunities in such diverse fields as computer design, software engineering, systems analysis, database design, computer graphics, and technical programming. Because of the strong theoretical foundation of the program, graduates are attractive to companies involved in computer manufacturing and to those industries using computers in high-technology applications.

Our proximity to two of the largest areas using computers in the nation, Silicon Valley and Los Angeles, provides our graduates with a broad-based collection of potential employers. Graduates have also obtained exciting and challenging positions at Air Force and Naval bases in California. A significant proportion of our graduates pursue graduate studies. Students who obtain the master of science degree will be in an excellent position to pursue a Ph.D.

Organizations

Student chapters of the Association for Computing Machinery (ACM) and the IEEE Computer Society are very active in the department. They organize field trips to major computer manufacturers and users in California. The ACM chapter sponsors the fall Programming Contest.

Computer science majors who have a distinguished academic record in computer science are invited to join Upsilon Pi Epsilon, the Honor Society for the Computing Sciences.

Co-op Program

Through the Cooperative Education program, students receive academic credit and are employed in computer-related industries. This is an excellent opportunity for a student to obtain experience, a reasonable salary, and college credit in this field.

Undergraduate Program

The bachelor's degree in computer science prepares students for careers in the computing industry or for graduate study. Combined with a minor in another field of study, the bachelor's degree allows students to utilize their computing expertise in a variety of specialized fields. The core and computer science theory courses are excellent preparation for students who intend to pursue an advanced degree in computer science.

For the computer science major, the department offers courses that represent both the core of study considered essential to all aspects of computing and advanced study sequences in particular fields of interest. The core classes introduce all majors to the spectrum of thought represented in computing. The advanced sequences allow the individual student to pursue concentrated work within such areas as computer architecture, artificial intelligence, databases, compilers, operating systems, computer science theory, computer graphics, software engineering, programming languages, networking, distributed systems, and parallel processing. The department also offers topics courses to keep students informed of current advances and methods in computing.

In addition to courses designed for majors, the department offers courses intended to introduce computing to nonmajors. These courses will benefit any major who wishes to include computing in their undergraduate study.

Grade Requirements. All courses taken to fulfill major course requirements must be taken for a letter grade. All courses required as prerequisites for a course must be completed with a grade of *C* or better before registration will be permitted.

Administrative Academic Probation. A minimum Grade Point Average (GPA) of 2.0 must be maintained in all courses taken in the College of Science and Mathematics. Students who fail to maintain a 2.0 GPA in courses within their major may be placed on administrative academic probation. Failure to eliminate the grade point deficiency could result in disqualification from the College of Science and Mathematics.

Faculty and Facilities

The faculty comes from a variety of areas including computer systems and architecture, theoretical computer science, programming languages, software engineering, computer graphics, distributed systems and parallel processing, neural networks, image processing, computer vision, pattern recognition, wireless communication and mobile computing, robot swarm communication, evolutionary computation, domain-specific languages, and real-time and embedded systems. They have in common a desire to provide a program that will give the student a broad range of experience in computer science as well as the depth of education that will be needed in the student's later career, whether professional or academic.

Students and faculty have access to a networked environment of UNIX workstations (Sun Microsystems and Linux systems) and microcomputer laboratories of PCs. These systems are connected to campus and international networks.

Faculty

J. Todd Wilson, *Chair*
Brent J. Auernheimer
Yu Cao
Lan Jin
Ming Li
Shih-Hsi Liu
Prudence Lowe
Walter Read
Shigeko Seki
Jerome Smith
Grace C. N. Wei
Henderson Yeung