

Carnegie Mellon's School of Computer Science (SCS) is among the best in the world, offering research and education programs at all levels from baccalaureate to doctorate. As an independent school, SCS collaborates with all areas of the university in bringing elements of computer science to various academic programs. The SCS program offers students unparalleled opportunities to learn, participate in cutting-edge research and join a world-class scholarly community.

The Carnegie Mellon Computer Science Department was founded in 1965, focusing initially on research and Ph.D. education. The research program has included early work on artificial intelligence, started here by a research team including Herbert A. Simon, the 1978 Nobel Prize winner in economics, and his colleagues. Research continues on the use of computers to simulate human thinking and learning processes. Research is also being done in programming systems, computer architecture, human-computer interaction, robotics and in a broad range of theoretical topics. The Ph.D. program is perennially ranked among the best in the nation. An undergraduate program was added in 1988 and graduated its first students in 1992.

The undergraduate program, a B.S. in Computer Science, is also ranked among the best in the nation. This program provides students with both the theoretical foundations and the practical experience necessary for employment or graduate study in computing sciences/information technology. Students have significant flexibility to craft personalized courses of study, and the school provides suggested concentrations in theory, computer systems, artificial intelligence, computer graphics and other areas. Admission to the program is highly competitive, but requires no prior background in computer science or programming; excellent students who have not had the opportunity to pursue these topics in high school are encouraged to apply.

The program provides students with a solid foundation for employment or graduate study in a wide range of computing fields. The curriculum's strong formal component ensures that students have the theoretical tools to remain current as technologies and systems change, rather than be limited by a narrow focus on a particular technology or application. Students gain insight into the practical issues of building and maintaining systems by participating in intensive project-oriented courses. Computer science students also select a minor (or second major) area of concentration in another field, encouraging them to explore applications of computing to other disciplines or develop skills that complement their computing expertise. Among the 25 different minors elected by current students are mathematics, business, engineering, Japanese, robotics, music, physics and biology.

Due to the tremendous number of ongoing research projects within the school (which includes, in addition to the Computer Science Department, the Human-Computer Interaction Institute, the Institute for Software Research, the Robotics Institute, the Language Technologies Institute, the Machine Learning Department, and the Entertainment Technology Center), many students obtain part-time or summer jobs or receive independent study credit by working on research while pursuing an undergraduate degree. Students seeking a research/graduate school career may pursue an intensive course of

research equivalent to four classroom courses, culminating in the preparation of a senior research honors thesis.

In addition to its undergraduate and Ph.D. programs, the School of Computer Science offers minors in Computer Science, Language Technologies, Neural Computation, Robotics and Software Engineering and a double major in Computer Science and Human-Computer Interaction.

Also, the School of Computer Science offers or participates in a number of professional master's degree programs. In many cases, Carnegie Mellon undergraduate computer science students can acquire an M.S. degree by spending just one additional year on campus.

Other Computer-Related Programs and Majors

In addition to the computer science major, Carnegie Mellon also offers a wide range of computer-related programs in the Carnegie Institute of Technology (CIT), the College of Humanities and Social Sciences (H&SS) and the Mellon College of Science (MCS). These programs are tailored to students whose main disciplinary focus is on applications.

In the Carnegie Institute of Technology, the Department of Electrical and Computer Engineering offers a B.S. program that allows substantial crossover with computer science, focusing on both hardware and software technologies.

In the College of Humanities and Social Sciences, a major in Information Systems is offered. The Department of Philosophy offers a major in Logic and Computation and the Psychology Department offers a major in Cognitive Science. A double major is also available in Human-Computer Interaction.

In the Mellon College of Science, the departments of Chemistry, Physics and Mathematics each offer specialized computational tracks.

Bachelor of Science in Computational Biology

The Mellon College of Science and the School of Computer Science have joined forces to establish an exciting new interdisciplinary program leading to a B.S. in Computational Biology. The goal of this new degree program is to provide an intensive interdisciplinary education to enable outstanding students to become leaders in identifying and solving tomorrow's biological problems using computational methods.

Bachelor of Computer Science and Arts

The Bachelor of Computer Science and Arts (BCSA) program was created in 2008 by the College of Fine Arts and the School of Computer Science. It provides an ideal technical and conceptual foundation for students interested in pursuing fields which comprehensively meld technology and the arts such as game design, computer animation, computer music, interactive stagecraft, robotic art and other emerging media.

Bachelor of Science in Music and Technology

This new program is offered jointly by the School of Music, the School of Computer Science and Carnegie Institute of Technology. The Music and Technology program will be offered to undergraduates who are admitted to the School of Music and either SCS or CIT. This program consists of a set of courses that span both music and technology, as well as a capstone composition, design or performance project.