What is Computer Science?

Computer science is shaping the future. A degree in computer science can help shape yours.

CS students adjust their robot prior to a project demonstration.

Computer science is an integral part of our lives, shaping virtually everything from the objects around us to the ways in which we communicate, travel, work, and play. And the computer revolution has just begun – CS is now a key enabler for discovery and innovation in most other fields of endeavor, making it an incredibly relevant course of study.

Computer scientists invent the future by developing architectures and techniques for more advanced computing, and by developing the applications that operate within those frameworks.

Computing has made possible undertakings such as landing the Curiosity rover on Mars, managing patient care to avoid undesired drug interactions, revolutionizing K-12 teaching and learning through the use of mobile devices, and even the creation of a computer that can win at Jeopardy.

As a CS student, you'll gain expertise in the development of software systems for applications, in creating and analyzing algorithms for a variety of applications, or in designing a new and emerging area of specialization. It's a field of unbounded potential – get ready to change the world!

A student in the CS sound lab experiments with new interfaces and modalities for musical expression.

Life as a CS Student

Michigan CS students have the opportunity for unique experiences through participation in programming events, interdisciplinary student teams, and student organizations.

Hacking and Programming Events

While at Michigan, CS students will find many opportunities to hack, collaborate, build, and gain valuable experience while participating in hackathons and other programming events that are organized by students, the University, or company sponsors.

Multidisciplinary Student Teams

Many CS students participate in student teams that design and build systems to compete in national and international competitions. CS is a critical component for team success. These teams include Michigan Autonomous Aerial Vehicles, UM::Autonomy, U-M Programming, U-M Solar Car, Hybrid Racing, and the Mars Rover Team. Other groups that advance societal good also need CS students, including BLUELab, E-MAGINE, and M-HEAL.

CS Student Organizations


Michigan Hackers: Experimenting with technology

gEECS: Girls in electrical engineering and computer science

HKN: Eta Kappa Nu honor society

Wolverine Soft: Video game development
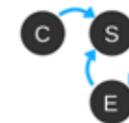
CSE Scholars: Students promoting the field of CS

Computer Science @ Michigan

Department of Electrical Engineering and Computer Science

cse.umich.edu

MICHIGAN ENGINEERING
UNIVERSITY OF MICHIGAN

Programs in Computer Science

Computers are everywhere, from inside our cars to on our desktops, and are affecting almost all aspects of our lives. The fast rate of innovation in computer technology has created many new and exciting opportunities for students with Computer Science undergraduate degrees.

Major in Computer Science

Gain the knowledge to solve big problems in new ways. With a Bachelor's degree in Computer Science, you'll be ready to make an impact in health care, entertainment, business, the performing arts, education, transportation, the environment – or virtually any other part of your world.

The computer science program through the College of Engineering requires students to have a solid foundation in computer software, hardware, and theory, but also gives each student ample opportunity to take advanced electives in areas of computer science such as databases, architecture, networks, artificial intelligence, and graphics, or in emerging interdisciplinary areas such as electronic commerce, web information systems, and computer game design.

Minor in Computer Science

Gaining a Minor in Computer Science is a smart way to broaden your horizons and make yourself more marketable to employers. The CS Minor is open to students in the College of Engineering, LSA, Music, and the Ross Business School.

Students work together to solve a problem during a course.

Major Design Experience Courses

Computer science students will select at least one senior-level major design experience (MDE) course in which they are able to explore a subject area in depth and complete a project of significance. Here are some of the MDE courses that are offered to CS students:

Mobile App Development for Entrepreneurs (EECS 441)
Students engage in the hands-on practice of entrepreneurship by actually inventing, building, and marketing their own mobile apps.

Autonomous Robots (EECS 467)
This class is a hands-on introduction to robotics from a computer science perspective. Some topics of the class include kinematics, sensors, motion planning, and artificial intelligence.

Computer Architecture (EECS 470)
Students design and build a dynamically scheduled processor while exploring modern computer architecture.

Software Engineering (EECS 481)
This course focuses on developing software for cognitively and/or physically impaired users with emphasis on the development of large, complex software systems.
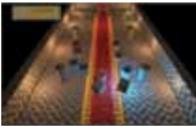
Computer Game Design and Development (EECS 494)
This course emphasizes hands-on design and development of games, including the underlying computer science and technology that supports game development.

Students are working on a project to bring automated vehicles to Ann Arbor.

Future Outlook

CS Grads Get Great Jobs!

Computer science is a growing, exciting field that is an integral part of virtually every field of study. Computer scientists are in high demand, are well paid, and have enormous opportunity for societal impact. According to the U.S. Department of Labor Statistics, by 2018 there will be 1.4 million computing job openings.

Michigan CS graduates are highly sought after, and our students often have multiple job offers by the time they graduate.

Full-Time Positions – Median annual salaries (2014)
• $85,000 (with Bachelor's)
• $101,500 (with Master's)

Internships – Median monthly pay (2014)
• $5,000 (during undergrad)
• $6,000 (during Master's)

Entrepreneurship

Computer science students are uniquely empowered to launch new ventures with the potential to transform industries and lives. You'll find student groups and campus resources that can help get your startup off the ground, including the Center for Entrepreneurship, the TechArb incubator, and MPowered. A CS degree, the connections you develop at U-M, and the assistance offered through these programs all help you in realizing your dream.

Companies Hiring Recent Grads:

Amazon	Hooklogic
Apple Inc.	IBM
Arbor Networks	Intel Corporation
Autodesk, Inc.	Intrepid Control Systems
Barclays Capital	JP Morgan Chase
Barracuda Networks	Lockheed Martin
Bloomberg	McKinsey & Company
Boeing	Microsoft Corporation
Bosch	Morningstar, Inc.
Cardinal Health	MyBuys
Cisco Systems	New World Systems
Disney	Orbitz Worldwide
Dow Chemical USA	PEAK6 Investment L.P.
DreamWorks	Qualcomm
DRW Trading Group	Samsung
Duo Security	Sega of Japan
Electronic Arts (EA)	Tecore, Inc.
eyeWyre Software Studios	Toyota
Epic	Twitter
Facebook	University of Michigan
Ford Motor Company	US Air Force
General Electric	Yahoo
Google	Zynga
Hewlett Packard	. . . and many others

A student meets with a job recruiter at the fall career fair.