



Computer Science

FROM STUDY TO SKILLS

All academic programs offered at the UM help students develop valuable skills. Computer scientists invent the future. Facebook, Twitter, medical innovations, national cyber defense, business analytics, video games, mobile apps, and the car you drive are all enabled by the efforts of computer scientists. Computer Science (CS) is an exciting and constantly evolving field that also accelerates the advancements taking place in other disciplines.

As a student of computer science you will learn to solve problems effectively, efficiently, and accurately. You will become an expert in analyzing and developing algorithms and software applications for existing and emerging areas of endeavor. It is a field of unbounded potential, ready to change the world.

Related fields include Mathematics, Business, Chemistry, Psychology, Physics, Pre-Med, Statistics, Communication Studies, Art and Design, Informatics, and Engineering.

SKILLS AND ABILITIES

Technical/Analytical Skills

- Designing /implementing/testing computer software
- Evaluating alternative software solutions
- Understanding the possibilities and limitations of computers
- Developing effective representation and storage of information
- Recognizing and solving computer security issues
- Exploring innovative ways of creating tools
- Modeling and simulating real-world activities
- Performing/Evaluating usability studies

Problem-Solving Skills

- Assessing needs
- Identifying relationships between problems and solutions
- Breaking complex problems into their component parts
- Evaluating tradeoffs in software design and development

Organizational Skills

- Planning and managing projects
- Working effectively and coordinating tasks in interdisciplinary teams
- Integrating different approaches to projects

Communication Skills

- Communicating with team members and end users
- Giving effective presentations and product demonstrations
- Writing specification documentation
- Understanding challenges of projects involving multiple cultures

BUILDING YOUR SKILLS OUTSIDE THE CLASSROOM

Employers seek out individuals who can demonstrate excellent verbal and written communication skills, teamwork and interpersonal skills, initiative, and a strong work ethic. Student organizations, research with faculty, and campus employment offer valuable opportunities to add to the skills you are developing in your classes. CS students participate in a wide range of interdisciplinary activities, such as clubs that develop mobile apps and

video games, the UM Solar Car Team, and programs through the Center for Entrepreneurship. Other options include study abroad, off-campus employment, or volunteering in the community. Finally, a summer internship may be the best way of all to test out a career field and develop marketable skills.





FROM SKILLS TO CAREER

The skills developed by Computer Science concentrators are highly sought after by employers in a wide range of fields from the computer industry to business, education, research, entertainment, and the arts.

Technical/Analytical Skills


Software engineer
Web and mobile app developer
Applications developer
Independent consultant
Cryptologist
Weather simulation engineer 
National security analyst
Entrepreneur

Problem-Solving Skills


Computer and information systems researcher
Computer security specialist
Data mining specialist
Computational healthcare specialist
Energy conservation analyst 
Financial engineer 
Intellectual property attorney 
Physician 

Many concentrators go on to graduate or professional school. The list below is a sample of careers undertaken by Computer Science graduates.


Organizational Skills

Chief information officer
Medical systems administrator
Computer organization coordinator
Project team leader
Database administrator
Business manager 

Communication Skills

Digital arts and entertainment programmer
Professor /Teacher
Foundation executive
Information technology manager
Computer training supervisor
Technical writer

 = Green Jobs

 = Further Study Required

For more career information, see O*Net at online.onetcenter.org

CONCENTRATION REQUIREMENTS

There are two program paths to a Bachelor's degree in Computer Science. One is through the College of LSA and the other is through the College of Engineering, with the major difference being that LSA students are required to meet the general LSA requirements. Concentration requirements include math courses, core computer science credits, upper level electives, and technical electives.

Options for the innovative senior year Major Design Experience include Software Engineering, Mobile App Development, Cloud Computing, Computer Game Design, and Computer Architecture.

We also offer a Computer Science minor through LSA.

All programs are administered by the Department of Electrical Engineering and Computer Science.

For complete information about the concentration, visit us at: cs.umich.edu/discover/programs.html

Computer Science Advising Office

2808 Computer Science and Engineering Building
734-763-6563
cs.umich.edu/discover

General information for LSA Computer Science students:

Newnan Advising Center

1255 Angell Hall
734-764-0332
lsa.umich.edu/advising

NEXT STEPS/RESOURCES

To learn more about extracurricular opportunities for Computer Science students, see: cs.umich.edu/discover/student_life.html

To learn more about jobs and careers for UM CS graduates, visit: cs.umich.edu/discover/jobs_and_salaries.html

To begin connecting to professionals in fields that interest you, create your own LinkedIn account: careercenter.umich.edu/article/getting-started-linkedin

To identify internships or job opportunities, visit Career Center Connector: careercenter.umich.edu/article/c3

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The Engineering Career Resource Center is also available for LSA CS majors: career.engin.umich.edu

On-campus jobs (work-study and non work-study jobs) are listed at: studentemployment.umich.edu/JobX_Home.aspx

Maize Pages list hundreds of organizations for students to get involved in: maizepages.umich.edu

Connect to Community lists volunteer opportunities in local organizations: connect2community.umich.edu

The Career Center

3200 Student Activities Building
734-764-7460
careercenter.umich.edu
facebook.com/careercenter.umich
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linkedin.com/company/the-career-center-at-the-university-of-michigan