

COMPUTER SCIENCE

What can I do with this major?

The field of computer science is continually changing. The areas listed below do not exhaust possible career options. See also *What Can I Do With This Major in Management Information Systems*.

AREAS

EMPLOYERS

STRATEGIES

PROGRAMMING

Operating Systems
Application Systems:
 Scientific
 Engineering
 Business
Maintenance
Research and Development

Computer systems design firms
Software developers
Data processing/Management firms
Contract and temporary employers
Most areas of business, government and non-governmental organizations including:
 Financial institutions, insurance companies, consulting firms, manufacturers, computer companies, telecommunications companies, retailers, healthcare organizations, hotels and restaurants, entertainment companies, environmental management firms, transportation companies, education institutions, research institutions, city, state and federal government

Seek programming experience through volunteer positions, internships and co-ops.
Develop attention to detail, logical thinking and communication skills.
Exhibit patience and creativity for designing programs.
Learn to work effectively independently on teams and with end-users while maintaining deadlines.
Supplement computer science degree with courses in business, science or engineering.
Maintain current knowledge of programming languages; vendor and professional certifications may increase job prospects.
Consider earning the Certified Computing Professional designation by completing a series of exams and experiential requirements.
Earn a master's degree for upper level positions.

SYSTEMS DEVELOPMENT

Planning/Analysis
Design
Building/Coding
Integration/Testing
Operations/Maintenance
Project Management

Most areas of business, government and non-governmental organizations including:
 Financial institutions, insurance companies, consulting firms, manufacturers, computer companies, telecommunications companies, retailers, healthcare organizations, hotels and restaurants, entertainment companies, environmental management firms, transportation companies, education institutions, research institutions, city, state and federal government

Develop excellent interpersonal skills for effective communication with technical and non-technical colleagues and clients.
Seek knowledge of industries, business areas or government agencies of interest. Complete a minor to gain specialized knowledge related to a field of interest.
Strengthen logical thinking and problem solving skills.
Maintain current knowledge of computer languages and technology.
Gain programming experience and specialize for increased opportunities.

AREAS

EMPLOYERS

STRATEGIES

SYSTEMS DEVELOPMENT continued

Obtain business experience through internships or part-time employment.
Supplement program with courses such as accounting, management, human resources, consulting to increase understanding of business theory.
Earn a graduate degree in technology or business for advanced opportunities in analysis, project management and executive operations.

NETWORK TECHNOLOGY

Intranet
Development
Installation
Testing
Monitoring
Maintenance
Security
Support
Hardware and Software Design

Most areas of business, government and non-governmental organizations including:
Financial institutions, insurance companies, consulting firms, manufacturers, computer companies, telecommunications companies, retailers, healthcare organizations, hotels and restaurants, entertainment companies, environmental management firms, transportation companies, education institutions, research institutions, city, state and federal government

Seek work experience in university computer labs or through related part-time jobs, internships or volunteer opportunities.
Develop effective analytical and problem solving skills.
Expect to spend a significant amount of time responding to inquiries from colleagues, customers and employees.
Acquire strong oral and written communication skills and an interest in helping others.
Gain knowledge in a variety of computer areas including programming, software and hardware.
Stay abreast of the latest network technologies.
Consider earning applicable certifications such as Cisco or Microsoft for some positions.

DATABASE ADMINISTRATION

Development
Installation
Testing
Maintenance/Support
Archiving/Security
Upgrading
Systems Integration
Management

Most areas of business, government and non-governmental organizations including:
Financial institutions, insurance companies, consulting firms, manufacturers, computer companies, telecommunications companies, retailers, healthcare organizations, hotels and restaurants, entertainment companies, environmental management firms, transportation companies, education institutions, research institutions, city, state and federal government

Develop logical thinking skills, attention to detail and the ability to concentrate for long periods of time.
Obtain technical experience through paid or volunteer positions.
Seek general knowledge of computer languages and database management software; consider specializing in one for increased marketability.
Acquire strong communication skills to prepare for work with teams of programmers and with staff who may have limited computer training.

AREAS

EMPLOYERS

STRATEGIES

INTERNET

Programming
Software Design
Systems Development (see Page 2)
Web Design/Maintenance

Internet exchange points (IXPs)
Internet service providers
Software vendors
Internet-related companies including: browsers,
search engines, web design services
business, government and nongovernmental
organizations
Consulting firms
Self-employed

Supplement major with courses in web design,
graphic design, internet development or network
architecture.
Pursue business classes or a business minor for
consulting and systems development positions.
Gain experience as a webmaster through part-time
jobs, internships or volunteering to design web
pages for student organizations.
Develop excellent communication skills and prepare
to work on teams which may include content
authors, graphic artists, programmers, etc.
Maintain current knowledge of web-based
programming languages.

EDUCATION

Teaching
Instructional Technology

Colleges and universities
Proprietary (for profit) schools
Public and private schools, K-12
Corporations

Gain experience working with students through
tutoring, part-time employment, internships in
computer labs and/or other technical positions.
Develop excellent interpersonal and public speak-
ing skills.
Inquire about certification process which is required
for K-12 teaching and varies by state.
Pursue a master's degree for teaching at most com-
munity colleges or two-year institutions.
Seek a doctoral degree related to information or
computer sciences for teaching opportunities at
colleges and universities. Develop a research
specialty for university teaching.
Earn a graduate degree in information technology
or a related field for instructional technology.

AREAS

EMPLOYERS

STRATEGIES

TECHNICAL SUPPORT

Customer/Product Support
Sales
Marketing
Technical Writing

Software/hardware manufacturers
Systems developers
Technical service providers
Retail stores
Education institutions

Develop excellent communication skills and an interest in helping customers solve problems. Exhibit patience and a commitment to customer satisfaction.
Secure experience working in university computer labs and at help desks.
Obtain general sales or customer service experience.
Acquire extensive knowledge of merchandise for retail sales positions.
Supplement curriculum with technical writing courses to develop skills.

GENERAL INFORMATION

- Consider earning a minor in math or pursuing it as a second major, as a computer science major is heavily math-based.
- Consider a dual major to help shape toward a particular career, since computer science intersects with a number of other fields
Examples: Biology for a career in bioinformatics; Political science/criminal justice for career in security and information policy; Fine arts for a career in animation; or, Business for some types of IT careers.
- Develop strong interpersonal, communication and teamwork skills. Patience and perseverance are essential for computer science professionals.
- Complete informational interviews with current computer science professionals to help establish career goals.
- Obtain an internship, co-op or part-time job in a relevant area to increase employability. Related experience is essential to employers hiring computer science majors.
- Obtain vendor-specific or networking certifications to gain a competitive edge for some positions.
- Obtain an area of specialization through a master's degree or by doing advanced coursework.
- Expect to work extended and/or irregular hours at times and to be "on call."
- Prepare to learn new information on a regular basis through online discussions, classes, conferences, periodicals, and update your skills accordingly.
- Note that a major in computer science can lead to being a designer, creator, and inventor of new technology. Example areas include computer hardware architecture, virtual reality, and robotics.
- Note that an interest in computers may not translate into an interest in computer science, as the major is heavily programming and math-based.
- It might be better to major in Business Administration and minor in Computer Science if you want to work in the private sector because the cloud is transforming IT and creating hybrid roles across the enterprise
- To enter the gaming industry, investigate training programs specific to game design and seek as much exposure to designing as possible. Pursue entry-level opportunities, such as tester, to gain experience.