What can I do with a major in...

Computer science

**ACTIVITIES COMPUTER SCIENCE MAJORS DO:**

Computer and information technology impacts many areas of our daily lives from downloading a song to driving a car. Because many of our daily tasks involve the use of technology, computer scientists can be found in nearly all professional sectors, including big technology firms, government agencies, startups, nonprofits, and local businesses, both large and small. Computer science majors possess a broad variety of skills that make them valuable to all businesses and there is an increasing need for industry to have knowledgeable computer professionals.

At the heart of the computer scientist is a passion to benefit society by solving problems through computer and information technology. They conceive, design, and test logical structures for solving problems by computer and find ways to do so by designing applications and writing software to make computers do new things or accomplish tasks more efficiently. This may include, creating applications for mobile devices, writing web-based applications to power e-commerce and social networking sites, developing large enterprise systems for financial institutions, creating control software for robots, programming the next blockbuster video game, or identifying genes for the next biotech breakthrough. All of these advancements may involve writing detailed instructions that list the order of steps a computer must follow to accomplish a necessary function, developing methods for computerizing business and scientific tasks, maximizing efficiency of computer systems already in use, or enhancing or building immersive systems so people are better able to socialize and interact with technology.

Computer scientists often work on a more abstract level than other computer professionals. Positions are not limited to traditional technology fields either. More and more computer science is becoming necessary in every job category, while the computer technology industry is emerging as a new creative field.

**INDUSTRIES COMPUTER SCIENCE MAJORS WORK IN (SAMPLE LISTING):**

<table>
<thead>
<tr>
<th>Manufacturing</th>
<th>Aerospace</th>
<th>Hardware design</th>
<th>Insurance</th>
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</thead>
<tbody>
<tr>
<td>Digital communications</td>
<td>Healthcare</td>
<td>Industrial/food products</td>
<td>Consulting</td>
</tr>
<tr>
<td>Factory automation</td>
<td>Federal safety agencies</td>
<td>Medical technology</td>
<td>Technology</td>
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<td>High speed computing</td>
<td>Telecommunications</td>
<td>Systems consulting</td>
<td>Communication</td>
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<tr>
<td>Automotive manufacturing</td>
<td>Environmental agencies</td>
<td>Computer-aided design</td>
<td>Small business</td>
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<tr>
<td>Software development</td>
<td>Finance industry</td>
<td>Electrical hardware</td>
<td>Product development</td>
</tr>
</tbody>
</table>

**EMPLOYERS WHO HIRE COMPUTER SCIENCE MAJORS (SAMPLE LISTING):**

- Amazon
- Target Corporation
- Securian Financial Group
- Medtronic
- Merck & Co.
- Ecolab
- Intel Corporation
- Ameriprise
- Veritas
- Alliant Tech Systems
- Accenture
- Apple Inc.
- General Mills
- Google
- Caterpillar Incorporated
- Unisys
- Land O’Lakes
- Vital
- 3M
- Best Buy
- Epic
- C. H. Robinson
- Mayo Clinic
- Eaton Corporation
- IBM
- SuperValu
- Thomson Reuters
- Honeywell
- Dell Compellent
- UnitedHealth Group/Optum
- Microsoft Corporation
- Open Systems International
- Wells Fargo
- Transition Networks
TYPES OF POSITIONS FOR COMPUTER SCIENCE MAJORS (SAMPLE LISTING):

- **Computer and information research scientist:** Invent and design new approaches to computing technology and find innovative uses for existing technology.
- **Computer network architect:** Design and build data communication networks, including local area networks (LANs), wide area networks (WANs), and intranets, ranging from small connections between two offices to next-generation networking capabilities such as a cloud infrastructure that serves multiple customers.
- **Computer programmer:** Write and test code that allows computer applications and software programs to function properly. They turn the program designs created by software developers and engineers into instructions that a computer can follow.
- **Computer systems analyst:** Study an organization’s current computer systems and procedures and design information systems solutions to help the organization operate more efficiently and effectively. They bring business and information technology (IT) together by understanding the needs and limitations of both.
- **Computer support specialist:** Provides technical assistance to computer system users in person, via phone or from remote location. Computer support specialists provide assistance concerning the use of computer hardware and software, including printing, installation, software, electronic mail, and operating systems.
- **Database administrator (DBAs):** Use specialized software to store and organize data, such as financial information and customer shipping records and ensure that data are available to users and are secure from unauthorized access.
- **Information security analyst:** Plan and carry out security measures to protect an organization’s computer networks and systems. Their responsibilities are continually expanding as the number of cyberattacks increases.
- **Software developer:** The creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or another device. Others develop the underlying systems that run the devices or that control networks.

**Some of these positions may require an advanced degree.**

USEFUL WEBSITES FOR COMPUTER SCIENCE MAJORS:

- Department of Computer Science and Engineering: cs.umn.edu
- Computer Work: computerwork.com
- Software Developer: softwaredeveloper.com
- Computer Science Unplugged: csunplugged.org
- Computing Careers: acm.org
- ComputerScience.org: computerscience.org

PROFESSIONAL ORGANIZATIONS:

- American Association of Artificial Intelligence: aaai.org
- Association for Computing Machinery: acm.org
- Institute of Electrical and Electronics Engineers (IEEE): iee.org
- IEEE – Computer Society: computer.org

*Additional job/internship search websites and resources can be found at cse.umn.edu/career.

Information on this page was compiled from the Occupational Outlook Handbook, the Encyclopedia of Careers and Vocational Guidance, University of Minnesota departmental websites, and student-reported data.