

Computer Science?

Computer Science programs¹ focus on computers, computing problems and solutions, and the design of computer systems and user interfaces from a scientific point of view. You will study the principles of computational science, computer technology; computing theory; computer hardware design; computer development and programming; language processing; principles of computer hardware and software components; databases; application testing; and human interface design; and end-use applications. Computer science programs teach students the use of principles of math and science to make computer-related equipment; how to research theory, hardware, and language design to solve technical problems; how to make custom software systems, artificial intelligence (AI), and systems that control business and management processes; make new specialized languages, programming tools, computer games, and computing devices; work with computers, peripheral equipment, computer languages, artificial intelligence (AI), knowledge-based systems, and computer games.

Programs at Montana State University² are designed with considerable flexibility, due to the numerous types of computer science jobs that exist. Students can choose from one of two options: professional or interdisciplinary. Students will receive a strong fundamental understanding of the field. Students may then select from exciting computer science electives such as artificial intelligence, computational biology, computer graphics, computer networks, databases, embedded systems, numerical computation, operating systems, software engineering and special topics courses. Students who complete a bachelor's degree will find themselves both highly marketable and well-prepared for employment and/or graduate school.

Characteristics associated with success¹ include a desire to work with computers, logical thinking and good problem solving skills, careful attention to the details of a project or activity, an interest in working with a team, and the ability to speak and write clearly.

You should¹:

- be a person who enjoys solving problems
- think logically
- enjoy working with ideas
- be able to critically and accurately analyze information
- be creative
- keep up with changing technology

Occupations in this field require the ability to¹: use ingenuity and imagination to find new ways to solve problems; work with abstract concepts and do technical analyses; pay close attention to detail; do exacting analytical work; have patience and persistence; work with extreme accuracy, even under pressure.

Related occupations include¹:

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|-------------------------------------|---|-------------------------|
| • Internet/Intranet Programmer | • Electrical Engineer | • Project Manager |
| • Central-Office Equipment Engineer | • Electrical Test Engineer | • Statistician, Applied |
| • College/University Faculty | • Electrical-Design Engineer | • Software Engineer |
| • Commercial Engineer | • Electronics Engineer | • Systems Programmer |
| • Computer Engineer | • Electronics-Design Engineer | • Systems Analyst |
| • Computer Network Specialist | • Illuminating Engineer | • Web Site Developer |
| • Computer Programmer | • Information Systems Manager | |
| • Computer Security Analyst | • Internet/Intranet Programmer | |
| • Computer Software Engineer | • Mathematical Technician | |
| • Computer Support Specialist | • Operations-Research Analyst | |
| • Computer Systems Analyst | • Power-Distribution Engineer | |
| • Customer-Equipment Engineer | • Power-Transmission Engineer | |
| • Database Administrator | • Programmer-Analyst | |
| • Database Programmer | • Engineering and Scientific Programmer | |

What Can I Do With a Major In...

Computer Science?

MSU graduates (Bachelor's degree) were hired in the following selected fields³:

Application Engineer—RightNow Technologies
Applications Programmer—Zoot Enterprises
Assistance Engineer—Advanced Acoustic Concepts
Assistant Network Administrator—Forthside Public Library
Assistant Technology Coordinator—Belgrade Public Schools
Campus Staff—Campus Crusade for Christ
Computer Programmer—Computers Unlimited
Computer Scientist—Naval Undersea Warfare Center
Computer Specialist—Alumni Association at MSU; Montana State University; Naval Undersea Warfare Center; RightNow Technologies
Computer Technician—Billings Public Schools
Consultant—Electronic Data Systems
Electronics Engineer—United State Air Force
Database Administrator Analyst—Advanced Silicon Materials Inc.
Embedded Software Engineer—Lockheed Martin; DISTek Integration, Inc.
Field Engineer—Schlumberger
Flight Instructor—The Flight Shop, Inc.
Game Designer—Arena Net
Information Analyst—Electronic Data Systems
ITC Consult Associate—IDS Montana
Leading Engineer for Auditing Control Systems—Montana State University
Programmer—Computers Unlimited; Digital Development
Programming Assistant—Incomprehensibilities, Inc.
Quality Assurance Analyst—Zoot Enterprises; Bridger Systems Choice Point; Summit Gaming
Software Developer—Imcomp International; Northrop Grumman Corporation; RightNow Technologies; Security Innovation
Software Engineer—Ferrell Companies Inc.; Incomprehensibilities; Northrop Grumman; Raytheon; Bozeman Pass; Software Design Associates; SRI International; Lockheed Martin
Test Engineer—Boeing
Tier Two Technical Support Specialist—RightNow Technologies
Senior Software Engineer—Orbit One Communications
Software Developer—Golden Helix, Inc.; Elk River Systems, Inc.; Security Innovation
Software Engineer—Dyna-Jet; Interface and Control Systems, Inc.; Micron Technology, Inc.; RightNow Technologies
Software Tester—Education Logistics
System Engineer—NFC Software Co.

Salary averages of survey respondents: (# of respondents in parentheses)³

2007: MT: \$ 35,930 (8)	Out of State: \$ 66,833 (3)
2006: MT: \$ 35,800 (10)	Out of State: \$ 42,750 (4)
2005: MT: \$ 38,500 (11)	Out of State: \$ 40,896 (5)
2004: MT: \$ 34,766 (13)	Out of State: \$ 38,723 (7)

Graduates from this program entered programs of further education at these institutions:

Montana State University	University of California—Berkeley	University of Illinois
University of Washington	Utah State University	Oregon State University

Other Sources of Information:

Institute for the Certification of Computing Professionals: www.iccp.org
Association for Computing Machinery: www.acm.org
Society for Computer Engineering: <http://sce.engr.sjsu.edu/>
IEEE (Institute of Electrical and Electronics Engineers) Computer Society: www.computer.org
Department of Computer Science—Montana State University: www.cs.montana.edu

For more information contact:



**MONTANA
STATE UNIVERSITY**

**Career, Internship, &
Student Employment
Services**

Montana State University
125 Strand Union Building
Bozeman, MT 59717
(406) 994-4353
www.montana.edu/careers/

¹University of Oregon. 2007. Created by intoCareers, a unit of the University of Oregon. Montana information Montana Career Information System. Discover: 2008 by ACT, Inc.

²Montana State University Department of Computer Science

³Montana State University Career & Internship Services

Number of graduates/number of respondents: 2004:44/31; 2005: 29/19; 2006: 41/23; 2007: 23/17