Computer Science

Computer Science programs\textsuperscript{2,3} teach students how to work with computers, design programs and write in a language that communicates with technology. A degree in Computer Science will allow the undergraduate to work as an entry level programmer, a network administrator, or many other possibilities. Computer and information research scientists invent and design new technology and find new uses for existing technology. They study and solve complex problems in computing for business, science, medicine, and other uses. Computer Science is a growing career field because almost every facet of business and government uses computers and software. Each application has the need for customizing, implementing, designing and maintaining systems.

The Computer Science Program at Montana State University\textsuperscript{3} is a four year degree program with a Professional or Interdisciplinary option. It is intended for students who want to prepare for careers that involve computing and computers. The Computer Science Department at Montana State University is part of the College of Engineering. As such they support the “mission of the College of Engineering and the University through its teaching, research, and service activities. The Department educates undergraduate and graduate students in the principles and practices of computer science, preparing them for computing careers and for a lifetime of learning.” \textsuperscript{3}

The goal of the Computer Science Program is to teach students how to apply the knowledge of computing and mathematics by leveraging both the international and interdisciplinary nature of computing. The program uses both the interdisciplinary nature of computing along with providing innovative educational and research opportunities.

Characteristics associated with success\textsuperscript{1,2} include finding enjoyment in the results of their work and a feeling of accomplishment. Computer Scientists also generally have an investigative nature and enjoy working with ideas that require an extensive amount of thinking.

You should\textsuperscript{1,2}:
\begin{itemize}
    \item Display an ability for analyzing problems
    \item Enjoy math and science
    \item Be effective at time management and leadership
    \item Be task focused, able to concentrate in various environments and not be distracted while performing work related tasks
    \item Have critical thinking skills
    \item Be able to identify complex problems and evaluate and implement solutions
\end{itemize}

Occupations in this field require ability to\textsuperscript{1}: apply general rules to specific problems, to tell when something is wrong or likely to go wrong and to arrange things or actions in a certain order or pattern according to a specific rule set.

Related occupations include\textsuperscript{1}:
\begin{itemize}
    \item Computer and Information Systems Managers
    \item Computer Engineers
    \item Computer Operators
    \item Computer Support Specialists
    \item Computer Systems Administrators
    \item Computer Systems Analysts
    \item Database Administrators
    \item Numerical Control Tool Programmers
    \item Operations Research Analysts
    \item Video Game Designers
    \item Web Developers
\end{itemize}
**MSU graduates (Bachelor’s degree) were hired in the following selected fields:***

Application Engineer—RightNow Technologies (now Oracle)

Applications Programmer—Zoot Enterprises

Assistance Engineer—Advanced Acoustic Concepts

Computer Programmer—Computers Unlimited

Embedded Software Engineer—Lockheed Martin

Game Designer—Arena Net

Programmer—Digital Development

Quality Assurance Analyst—Zoot Enterprises; Bridger Systems Choice Point

Software Developer—Incom International; Northrop Grumman Corporation; Right Now Technologies; Security Innovation

Software Engineer—Ferrell Companies Inc.; Incomprehensabilities; Northrop Grumman; Raytheon; Bozeman Pass; Software Design Associates; SRI International; Lockheed Martin

Test Engineer—Boeing

Computer Specialist—Alumni Association at MSU; Montana State University; Naval Undersea Warefare Center; Right Now Technologies (now Oracle)

Embedded Software Engineer—Distek Integration

Leading Engineer, Auditing Control Systems—Montana State University

Senior Software Engineer—Orbit One Communications

Tier Two Technical Support Specialist—RightNow Technologies

Electronics Engineer—United State Air Force

Software Developer—Golden Helix, Inc.

Software Engineer—Dyna Jet; Interface and Control Systems, Inc.; Micron Technology, Inc.

Quality Assurance—Summit Gaming

In the field for “Computer Programmers” the lowest 10% of salaries for 2012 (comparable to new college graduate starting salaries) was $42,800 annually. The median wages in the nation in 2012 was estimated at $74,300 annually. In 2012 there were 343,700 positions nationally with an expected growth forecast of +8% through 2022. In 2012 the lowest 10% of salaries for the state of Montana (comparable to new college graduate starting salaries) was $36,600 annually. The median wages in Montana in 2012 was estimated at $58,700 annually. In 2012 there were 950 positions in Montana with an expected growth forecast of +9% through 2022. Job openings in Montana and nationally are due to both growth and net replacement. Please remember when reviewing the salary information that it is the “median”, meaning 50% of reported wages fell below and 50% above the reported wage.

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

Montana State University

University of California, Berkeley

University of Minnesota

University of Illinois

Virginia Tech

Carnegie Mellon Silicon Valley

University of Washington

Oregon Graduate Institute

**Other Sources of Information:**


CompTIA The IT Industry Association: www.comptia.org

IEEE Computer Society: www.computer.org

Computer Science Department—Montana State University: www.cs.montana.edu

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3 Montana State University Department of Engineering

4 O*Net: online.onetcenter.org

Number of graduates/number of respondents: 2012:5/1; 2011: 7/1; 2010: 6/0; 2009: 21/8