

Career Spotlight

Computer Scientist

Computer scientists work as theorists, researchers, or inventors. They use innovation to solve complex problems and create or apply new technology. The areas of computer science research range from complex theory to hardware design to programming-language design. Some researchers work on projects such as developing and advancing uses of virtual reality, extending human-computer interaction, or designing robots.



EDUCATION

Computer scientists need a Ph.D. in computer science or computer engineering, which usually requires four or five years of study after completing a bachelor's degree. After two years of general education, they choose a specialized field, which can greatly help in obtaining a job. Some field options include finance and biology. Computer scientists with a Ph.D. are likely to enjoy excellent job prospects.

WHEN MATH IS USED

Computer scientists use mathematics as they span a range of topics from theoretical studies of algorithms, which are a series of steps understood by someone or something in order to complete a task in a given number of steps, and the computation of implementing computing systems in hardware and software.

POTENTIAL EMPLOYERS

Many computer scientists are employed by Internet service providers, web search portals, and data processing, hosting, and related service firms. Others work for government, manufacturers of computer and electronic products, insurance companies, financial institutions, and universities. A growing number of computer specialists are employed on a temporary or contract basis. Many of these individuals are self-employed, working independently as contractors or consultants. Job outlook is expected to grow by 19 percent from 2010 to 2020, particularly in the field of internet work.

FACTS

Computer scientists can work in a variety of fields, including data mining, cognitive science, and software engineering. Data mining alone introduces numerous subfields, such as human rights. Computer scientists use their skills to obtain data from the justice system, allowing them to discover human rights violations in connection to invalid or fraudulent legal records.

CITATIONS

http://en.wikipedia.org/wiki/Computer_science

<http://www.bls.gov/ooh/computer-and-information-technology/computer-and-information-research-scientists.htm>

<http://www.bls.gov/oes/current/oes151111.htm>

MATH REQUIRED

- College Algebra
- Trigonometry
- Calculus I, II, III
- Linear Algebra
- Ordinary Differential Equations
- Theory of Analysis
- Abstract Algebra
- Graph Theory
- Numerical Methods
- Combinatorics

Low-end Salary: \$64,300/yr

Median Salary: \$110,620/yr

High-end Salary: \$170,610/yr