Cole Miller

Career Research Part 2

Mrs. Viox

**Computer and Information Research Scientists**

The nature of work for a computer and information research scientist is to create new technology and computing device for advancements in technology. They work in multiple fields to solve many complex problems. The main work activities that they part take in is to solve problems for various people and to develop new technology. They work full time and sometimes have flexible work hours. Common work activates are to create new designs or creating the design. For example making a new language to program in or creating new hardware for computers. 26% of people in this career field work in a government position.

To be a Computer and Information research scientist you need a bachelor’s degree in a field involving computers example Computer Science or computer engineer. Then you will go on to get your Ph.D. which requires 4 to 5 years to obtain. You may have to take some biology classes depending on what you plan on specializing in. There is advancement, there is the opportunity to become a Computer and Information Systems Manager. It takes about 5 years of experience to become one though.

The job outlook is very good. It is predicted to grow 15% per year which is faster than average for all occupations. Technology continues to grow and that makes the need for computer scientists to grow as well. Now with businesses collecting online data the need for computer scientists continues to grow even more. Also the robotics field is starting to grow more and more as technology advances. With hackers and cyber-attacks becoming more popular computer scientists are used to come up with solutions to stop them. The median annual wage for a computer scientists in 2012 was $102,190. The lowest 10 percent earned less than $57,220, and the top 10 percent earned more than $151,900.

* Mechanical engineer
* Database Administrators
* Computer hardware engineers

**Computer and Information Systems Managers**

Computer and Information Systems Managers tend to be high positions in companies for example Chief information officers (CIOs) or Chief technology officers (CTOs). In these positions the person is responsible for most of the technology that the business uses. They are usually focused on the “big picture”. Lower positions in a business are IT directors have control over all of the IT people. There is a job outlook of 15%.

Computer and information systems managers must have a bachelor’s degree in a computer- or information science–related field. A degree in one of these fields usually takes about four year to get the degree. People wanting to advance to higher positions need experience in a company to advance in rankings in the company. There are many different positions they can fill so multiple opportunities for advancement. A Master of business degree is also common in these positions.

Employment of computer and information systems managers is projected to grow 15 percent from 2012 to 2022. The demand for computer and information systems managers will increase as companies continue to expand their use of wireless and mobile networks. An increase in demand for computer software will increase the need for employees. Cybersecurity in information technology departments will require more attention because of cyber threats, a trend that is expected to increase over time. The median annual wage for computer and information systems managers was $120,950 in May 2012.

* Computer and Information Research Scientists
* Computer Programmers
* Software Developers

**Software Developers**

Many software developers work for computer systems design and related services or software publishers. Some systems developers work in computer and electronic product manufacturing industries. Applications developers work in offices or, places such as insurance carriers or corporate headquarters. Software developers usually work collaboratively with a group of co-workers.

Typically software developers usually will have a bachelor’s degree in computer science or software engineering. Sometimes people with degrees in mathematics will be accepted depending on their knowledge of computer science. Writing code is not their first priority, developers must have a good background in computer programming. Throughout their career, developers must keep up to date on new tools and computer languages.

Software developer’s employment is expected to be 22% from 2012 to 2022. The reason for the rapid growth is an increase in the demand for computer software. Mobile technology requires new applications. Industry is greatly increasing its use of computer systems and applications. Also, concerns over threats to computer security could result in more investment in security software to protect computer networks and electronic infrastructure. The median annual wage for software developers was $90,060 in May 2012.

* Computer and Information Systems Managers
* Computer Hardware Engineers
* Computer Support Specialists

**Computer Network Architects**

Computer network architects build data communication networks, including local area networks (LANs), wide area networks (WANs. The size of the network can vary depending on the business. Network architects must have extensive knowledge of an organization’s business plan to design a network that can help the organization achieve its goals. Some common things that they do is come up with a design for where all of the cables for the network shall go. Also decide what type of hardware that should be used in the network. They can also help make decisions on what future technology to be used.

Computer network architects usually need at least a bachelor’s degree in computer science, information systems, engineering, or a similar field. People who hire network architects sometimes want applicants to have a Master’s of Business Administration (MBA) in information systems. MBA programs generally require 2 years of study after undergraduate and include both business and computer-related courses.

Employment of computer network architects is expected to grow 15 percent from 2012 to 2022. Which is faster than most professions. With the new use of cloud computing, which allows users to access storage, software, and other computer services over the Internet, is likely to cause a decrease in the demand for computer network architects. Organizations will no longer have to design and build networks in-house instead, companies that provide cloud services will do this. Though they could work on the cloud services and maintain it.

* Network and Computer Systems Administrators
* Information Security Analysts
* Database Administrators

**Computer Programmers**