

Career Profile

A weekly series devoted to providing information on career exploration

Do You Like

- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems?
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times?
- Writing computer programs for various purposes?
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions?
- Analyzing needs and product requirements to create a design?

Then This Could Be The Career For You!

The Type of Work

- Modify existing software to correct errors, to adapt it to new hardware or to upgrade interfaces and improve performance.
- Advise customer about, or perform, maintenance of software system.
- Analyze information to determine, recommend and plan installation of a new system or modification of an existing system.
- Consult with engineering staff to evaluate interface between hardware and software, develop specifications and performance requirements and resolve customer problems.
- Direct software programming and development of documentation.
- Store, retrieve, and manipulate data for analysis of system capabilities and requirements.
- Confer with data processing and project managers to obtain information on limitations and capabilities for data processing projects.
- Consult with customers or other departments on project status, proposals and technical issues such as software system design and maintenance.
- Coordinate installation of software system.
- Prepare reports and correspondence concerning project specifications, activities and status.

Pathways to Success

Most employers prefer applicants who have at least a bachelor's degree and broad knowledge of, and experience with, a variety of computer systems and technologies. The usual college majors for applications software engineers are computer science, software engineering, or mathematics. Systems software engineers often study computer science or computer information systems. Graduate degrees are preferred for some of the more complex jobs.

Many programmers require a bachelor's degree, but a 2-year degree or certificate may be adequate for some positions. Some computer programmers hold a college degree in computer science, mathematics, or information systems, whereas others have taken special courses in computer programming to supplement their degree in a field such as accounting, finance, or another area of business.

In addition to educational attainment, employers highly value relevant programming skills and experience. Students seeking software engineering or programming jobs can enhance their employment opportunities by participating in internships. Some employers, such as large computer and consulting firms, train new employees in intensive, company-based programs.

Individuals who possess knowledge in:

- Computers and Electronics - circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Engineering and Technology - practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- English Language - structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- Customer and Personal Service - principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Design - design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Mathematics - arithmetic, algebra, geometry, calculus, statistics, and their applications.

What Employers Look For

Overall, employment of computer software engineers and computer programmers is projected to increase by 21 percent from 2008 to 2018, much faster than the average for all occupations. In 2008, there were 394,800 computer software engineers. Through 2018, those employed under this career category will increase over 120,000, reaching nearly 515,000 nationwide.

Employment of computer software engineers is expected to increase by 32 percent from 2008-2018, which is much faster than the average for all occupations. In addition, this occupation will see a large number of new jobs, with more than 295,000 created between 2008 and 2018. Demand for computer software engineers will increase as computer networking continues to grow. For example, expanding Internet technologies have spurred demand for computer software engineers who can develop Internet, intranet, and World Wide Web applications. Likewise, electronic data-processing systems in business, telecommunications, healthcare, government, and other settings continue to become more sophisticated and complex. Implementing, safeguarding, and updating computer systems and resolving problems will fuel the demand for growing numbers of systems software engineers.

Job Outlook

COMPUTER SOFTWARE ENGINEER

DEFINITION:

Research, design, develop, and test operating systems-level software, compilers, and network distribution software. Apply the theories and principles of computer science and mathematical analysis to create, test, and evaluate the software applications and systems that make computers work.



NAME: Ryan Lattimer

JOB TITLE: Software Engineer

COMPANY: The Ridge Tool Company

LOCATION: Elyria, Ohio

Q. How did you become interested in your particular field?

A. When I was a child my dad bought a computer and I was fascinated with it. My dad was not able to figure it out so I had to show him how everything worked. As I became older, I started building my own websites.

Q. Who or what influenced your decision the most and why?

A. My parents and wife have always been very supportive and encouraged me to pursue my passion for computers.

Q. What is your educational background?

A. I graduated from Elyria High School in 2002. I then attended Lorain County Community College through their partnership program with The University of Toledo on a full scholarship. I graduated with a bachelor's degree in Computer Science and Engineering in 2006.

Q. How did you get to where you are today? What path did your employment journey take?

A. While in college I had co-op positions at Invacare and Ridge Tool, in Elyria. After graduating, I started my career at a software company on the east side of Cleveland called TMW Systems. While I was there I built software for trucking companies. After working there for several years I left and began working at Ridge Tool.

Q. What skills or certifications do you think are needed to be successful in this field?

A. In order to be successful in this career field you need to be a lifelong learner; technology is changing and evolving every day. Keeping up with the changes allows you to work more efficiently and effectively. You also need to be an exceptional problem solver. A lot of what you do is figuring out how to use technology to create software to solve your client's problems. You also need to have good communication skills in order to speak to the clients you're building the software for, and to work with members in your team.

Q. What is the best part of your job?

A. I like being able to use the latest technology to build awesome software in an industry with so many passionate and intelligent people. I love learning about all the new technology that comes out and being able to use it firsthand. It is also very rewarding to create software that makes people's lives or jobs easier.

Q. Do you have any words of advice for someone considering a career in your field?

A. There are a variety of career paths you can take in the field of computer technology, try to find one that is the most interesting to you. Make sure you are passionate about whatever path you decide on.



Marcus Little and Ryan Lattimer of Ridge Tool review the new RIDGID Digital Level app for Android.

Earnings Potential

Location	Year	Pay Period	Low	Median	High
United States	2009	Yearly	\$59,600	\$93,500	\$139,900
Ohio	2009	Yearly	\$54,400	\$81,000	\$117,300
Cleveland Elyria-Mentor, OH MSA	2009	Yearly	\$51,900	\$74,900	\$100,500

O*Net Online, <http://online.onetcenter.org>.

Wage figures are also influenced by skills, experience and industry.

Sources: Occupational Information Network, O*Net Online, <http://online.onetcenter.org>; U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, <http://stats.bls.gov/oco>