



ET-2004-10-104-ARC

Educational Topic

Computer Scientist

Related Job Titles:

Systems Analyst, Computer Engineer, Software Engineer, Software Developer, Database Administrator, Computer Support Specialist, Network Engineer, Hardware Engineer, Network Administrator, Systems Administrator, Database Specialist, Communications Specialist

Job Description:

Computer Scientists design and develop new computer hardware and software. They research and form new computer rules. They also invent new products such as robots that use virtual reality, new computer languages, programming tools or even computer games. They normally work in offices or laboratories and spend most of their time on the computer.

Interests / Abilities:

- · Do you enjoy working with math and technology?
- Are you good at math?
- Are you good at reasoning and logic?
- · Do you like to solve problems?
- Do you work well with a team?
- Do you pay close attention to details?
- Do you express yourself well when speaking to others?

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in Computer Science, Computer Engineering, Electrical Engineering, Information Science, Computer Information Systems, Data Processing or a similar subject from an accredited college or university. This study must include 30 semester hours of Differential and Integral Calculus, Statistical Techniques and Computer Science Theory and Practical Applications. To do research, a Ph.D. is highly desired for this position.

Suggested School Subjects / Courses:

- Math
- Science (physics)
- Computer programming
- Electronics

Areas of expertise:

- *Computer engineering:* use math and science to design hardware, software, networks and processes to solve technical problems such as analyzing flight systems and aerospace data
- Applications programming: design and develop software that controls and automates processes such as flight software
- *Communications:* install, test and solve problems for hardware and software on a network
- Systems analysis: use computer technology to solve specific business, scientific or engineering problems
- Database administration: design, change, test and manage the security of computer databases
- Computer Support: assist and advise computer users with hardware, software and system problems

Additional Resources:

- Association for Computing (ACM) http://www.acm.org
- Astrobiology Summer Academy http://academy.arc.nasa.gov/
- Earth to Orbit: Engineering Design Challenges http://eto.nasa.gov/
- Graduate Student Researchers Program http://spacelink.nasa.gov/Instructional.Materials/NASA.Educa tional.Products/Graduate.Student.Researchers.Program.Brochur e/.index.html
- IEEE Computer Society http://www.computer.org
- Institute for Certification of Computing Professionals (ICCP) http://www.iccp.org
- MATHCOUNTS Competition http://mathcounts.org/
- Minority University Research and Education Programs http://mured.nasaprs.com/
- NASA Cooperative Education Program for college students http://spacelink.nasa.gov/Educational.Services/ NASA.Education.Programs/Student.Support/NASA.Cooperative .Education.Program/.index.html
- NASA Jobs http://nasajobs.nasa.gov/
- NASA SHARP Internship Program for highschoolers http://www.mtsibase.com/sharp/
- NASA Student Employment http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Student Involvement Program student contests http://www.nsip.net/index.cfm

What can I do right now?

- Read magazines like MacWorld, Byte, and PC World.
- Join a computer club.
- Take as many math and computer classes as you can.
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit. (202) 783-7200
- Participate in science fair projects.

- Revolutionary Vehicle Concepts and Systems student competition http://avst.larc.nasa.gov/competitions.html
- Robotics Education http://robotics.arc.nasa.gov
- Student's Guide to Astrobiology http://www.astrobiology.com/student.html
- Tech-Interns.com http://www.tech-interns.com/
- ThinkQuest encourages the use of computers and network technology in education http://www.thinkquest.org

Please take a moment to evaluate this product at: http://ehb2.gsfc.nasa.gov/edcats/educational_topic Your evaluation and suggestions are vital to continually improving NASA educational materials. Thank you.



http://quest.nasa.gov/people/index.html

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