



Computer Design Engineer



Berta Alfonso
Computer Design Engineer

NASA Kennedy Space Center

I design computer hardware and software for the space program. In my day-to-day work I meet with other engineers, search the web for new information on computer chips, and attend classes to learn new technology. By working with the other engineers in my team, we together come up with a design, build it, and check that it works ("debug"). To document our work so that others may use it, I must also write up a detailed description of how each design works.

Areas of expertise:

- Computer hardware design
- Computer software design

How I first became interested in this profession:

I came to the U.S. from Cuba when I was six years old, and I was put into the first grade. I didn't know any English, but fortunately, math is a subject that I didn't need English to understand. It had always made sense to me. When I graduated, it was evident that computers were the future, so I decided to become a computer engineer.

What helped prepare me for this job:

I had a solid background in science and math. Coursework in electrical engineering and computers was useful, but what I found most helpful as a young scientist was working with the more experienced engineers. They helped me understand that, while schoolwork gives you the foundations, it is real work experience that makes it all come to life. I believe that one is never done learning, and so I am always ready to study more in order to keep up with my rapidly changing field.

My role models or inspirations:

My parents taught me by example that determination and hard work always pay off. Growing up with their love and support, made me feel that I could accomplish anything I applied myself to.

My education and training:

- B.S., Electrical Engineering/Computer Engineering, University of Miami

My career path:

- Sixteen years at NASA/Kennedy Space Center working as a design engineer
- One year as a systems engineer

What I like about my job:

I love the process of bringing new ideas to life. This creative aspect of my job is what I find most exciting! I also like to know that I am contributing to the space program, which will benefit all mankind.

What I don't like about my job:

NASA is a government agency, and Congress has to approve our budget every year. September through November are always tight months for projects because, while October is the start of the new fiscal year, Congress doesn't always sign the budget on time. Working within a budget can be difficult, and sometimes the amount of paperwork required to document an engineering design can be tedious—but necessary!

My advice to anyone interested in this occupation:

Do research and tinker. Learn to use your library resources, and to find reliable information on the internet. Ask questions to people working in fields that interest you. Learn by doing! Take technology classes at your school. Remember: You don't always have to be right. All you have to do is to be willing to learn.

Additional Resources:

- American Institute of Biological Sciences
<http://www.aibs.org>
- American Physiological Society
<http://www.faseb.org/aps>
- American Society for Biochemistry and Molecular Biology
<http://www.biophysics.org/biophys/society/biohome.htm>
- American Society for Microbiology
<http://www.asmsusa.org>
- Astrobiology Summer Academy
<http://academy.arc.nasa.gov/>
- Biotechnology Industry Organization
<http://www.bio.org/welcome.html>
- Graduate Student Researchers Program
<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html>
- 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 Office of Life and Microgravity Sciences and Applications
<http://www.hq.nasa.gov/office/olmsa/>
- NASA SHARP Internship Program for high-schoolers
<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>
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
<http://core.nasa.gov>
- Student's Guide to Astrobiology
<http://www.astrobiology.com/student.html>
- Tech-Interns.com
<http://www.tech-interns.com/>

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Thank you.

