How To Find A Job

When a BS in Physics meets the real world

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Sr. Manager, Systems Design Engineering
About Me – Education

Graduated from University of Idaho with BS in Physics and BS in Mathematics in 1987

- Thought I would be interested in studying astronomy, but found optics and condensed matter physics interesting as well.
- Decided I wanted to go to graduate school…

Graduated from UW with a PhD in Physics in 1996

- Helped move from the old Physics Bldg (now Mary Gates Hall) into this building
- Thesis: “Surface Melting of Ice” (advisor Sam Fain).
- Also spent time working with the Physics Ed group as a TA.
- Realized that I wasn’t all that interested in academic career track as I neared completion of my studies – what to do next?
Applications Engineer, Microstar Laboratories – Bellevue (‘96 – ’00)
- Data acquisition specialist
- Conducted training sessions for customers and employees

Embedded Software Engineer, Index Sensors and Controls – Redmond/Stanwood (‘00 – ’03)
- They were one of my customers when I worked for Microstar Laboratories
- Designed embedded control systems on microcontrollers for automotive systems, refrigerator/freezers, pellet stove controllers, and even a coffee roaster.
- No operating system, just read and write directly to ports to send and receive signals.
About Me – Employment History II

Embedded Software Engineer, Intelligent Ion Inc. – Seattle (‘04)

• Spin off from UW Chemistry department professor who had an idea he wanted to commercialize

• Startup company trying to build a desktop sized mass spectrometer.

• Continued to develop skills as an embedded software engineer working with custom chips, 32-bit processors (still no OS) and TCP/IP.
Sr. Manager, Systems Design Engineering, Allen Institute for Brain Science – Seattle ('04 – present)

• In charge of instrumentation design for high throughput large scale neurophysiology research systems

• We work on instrumentation design holistically.

• Understand the science, mechanical, electrical, and software components all at the same time.

• Provide design guidance and test, and system troubleshooting as well as ongoing technical support.
The Job Search Process

Steps
1. Identify companies you might want to work for
2. Application process – Resume and cover letter
3. Phone Screen(s) – can be several levels of this
4. Interviews – not uncommon to be more than one
5. Repeat…in parallel
How to find a job – Looking for a company

*Know what you want to do with your career and apply for positions that match that.*

**Networking**
- Use any inside contacts that you have at a company to your advantage
- This is a huge benefit to getting your resume seen.
- Use LinkedIn, family contacts, friends, etc.

**Don't flood the market.**
- Employers can see if you applied for multiple positions at the same place
- Quality over quantity!
How to find a job – Your resume

• Things to include: Skills
  – Analytical skills – physics education is excellent preparation for this. Make sure you emphasize how well you solve problems.
  – Software languages – C++, Python, etc.
  – Instrumentation skills, e.g. optics, lasers, etc.
  – EE tools - FPGA, Analog/digital design, Board layout
  – ME tools - Solidworks, etc.

• Things to include: Experience
  – List most important experiences first
  – Senior project, internships

• Things not to include
  – Class list - not relevant to any job you will ever apply for.
  – GPA if < 3.7
How to find a job – Cover Letter

Absolutely must do this!
• Tailor it to the specific position
• Research the company before applying.
• Match the cover letter to the job requirements.

Know your audience - put yourself in the position of the hiring manager and try and present your case for why you should get the job.
How to find a job – Phone interviews

• Have a plan! Spend 2-3 hours more of researching the company.

• Be able to answer a lot of canned interview questions

• Ask engaging questions! You should have lots of questions from your research.
  – Pick at least 3-5.
  – Listen to the answers and follow up.

• Engage!!! This is critical - people want to hire someone who is interested and engaged with the company.

• Be polite. This goes a long way in all endeavors.
How to find a job – In person interviews

• Have a detailed plan before you go
  • Who is on the interview team?
  • What will each individual on the interview team want to know about you and how you can do the work of this job?
  • Is there some kind of skills test as part of the job interview?
  • PRACTICE!!!!

• Dress for success - show professionalism
• Show up about 10-15 minutes early.