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# Mentoring in Engineering & Computer Science & Technology Jobs

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# I work in Geek Central -



Sun Microsystems - Menlo Park Campus - in the Silicon Valley

- 1982 - 1984, Atari Sunnyvale Research Lab
- 1984 - now, Sun Microsystems
  - SEED since 2001: Sun's world-wide Engineering mentoring program
  - 70% of SEED mentors are executives (Director, Vice President)
  - Proven track record of strong diversity, very high satisfaction, high management regard, and high retention.
  - SEED participants as a group earn more promotions and higher performance ratings than Sun overall.

# Overview

## - Mentoring

- What do Mentors do?
- Benefits of Mentoring
- Formal versus Informal Mentoring
- How to Find a Mentor?
- How to Make Mentoring Work Better

## - Getting a Job

- Finding an Engineering or CS Job - What Counts?
- Ways to Get Experience Before Getting a Job

## - Speaking Notes and Additional Material

## - References

# *Mentoring*

# What Do Mentors Do?

- Listen, review, provide specific advice as appropriate
- Recommend training, reading, & experiences
- Discuss current trends, technology, ideas
- Help mentee develop personal and career goals
- Evaluate progress, recommend better routes to success
- Make introductions, recommend mentee
- Share their thinking

# Benefits of Mentoring

## - For the **Mentee**

- Working with a master of your craft: learn faster, learn what matters
- Borrow mentor's network, increased connections
- Start building your professional reputation
- Earn mentor's good recommendation
- Gain a broader scope, wider perspective, inspiration

## - For the **Mentor**

- A new and direct source: ideas, information, energy
- Paying back, helping as they were helped
- Gain a broader scope, wider perspective, inspiration

# Formal versus Informal Mentoring

## - Formal

- Both mentor and mentee want to be matched
- Program acts as matchmaker - no cold calling
- Program looks out for both mentor and mentee
- Metrics can be collected - allowing improvement
- More diversity potential (demographic, geographic)
- Greater mentor/mentee seniority spread possible

## - Informal

- Quicker start-up, less overhead, lower cost
- More appropriate for peer-to-peer
- Works better for task learning
- Less commitment, less scary

# How to Find a Mentor?

- MentorNet (E-Mentoring Network)
- Professional groups - ACM, SWE, CRA-W, IEEE
- University-sponsored programs
- Ask your major advisor to make a recommendation (and an introduction!)

# How to Make Mentoring Work Better

- Identify and discuss learning goals early
  - Can change as understanding evolves
- Talk regularly
  - Be pleasantly persistent
  - Reschedule when life gets in the way
  - Don't take rescheduling or silence personally
- Mentee sets the agenda in advance, drives the relationship
- Meet in person if possible, but at-a-distance works too
- Respect confidentiality

# *Finding a Job*

# Finding an Engineering or Computer Science Job - What Counts?

- Recommendations Count
- Your academic degree, where you graduated Counts
- Experience Counts
- Learning fast, solving problems fast Counts

For specifics, see p.19 & p.21

# A Way to Get Experience Before You Get a Job: Open Source

- Start with *sourceforge.net* No pay but many opportunities to show your stuff on small software projects.
- Fix bugs, make tools, optimize, document, create a good reputation in the worldwide technical community.
- Join the global electronic conversation of Engineering and the computing industry.

“On the Internet,  
nobody knows  
you’re a dog.”



“On the Internet, nobody knows you’re a dog.”

Peter Steiner  
July 5, 1993 cartoon  
from *The New Yorker*  
(Vol.69 (LXIX) no. 20)

See p. 20 for more.

# 3 More Ways to Get Experience Before You Get a Job

- **Internships -**

Often three to six months' duration. Can serve as one long job interview. Most Silicon Valley internships are paid. Internships usually happen in college, during summer break, or shortly after graduation.

- **Volunteer projects -**

Often office clerical work or low-level programming work (such as creating a web page, database, or set of web tools for a non-profit organization). Learn, create a body of work, earn a good reputation and recommendations. You can volunteer lifelong: during or after college.

- **College jobs -**

Start small in a safe environment while still in school. Even office clerical jobs can give excellent experience and contacts.

# Technology is Fun!

“I, for one, am and will always be a practicing technologist. When denied my minimum daily adult dose of technology, I get grouchy. I believe that technology is fun, especially when computers are involved, a sort of grand game or puzzle with ever so neat parts to fit together... If the technology you do isn't fun for you, you may wish to seek other employment. Without the fun, none of us would go on.”

- Ivan Sutherland, *Technology and Courage*, 1996

Over 55 patents.

Computer History Museum Fellow, 2005

AM Turing Award, Association for Computing Machinery, 1988

IEEE John Von Neumann Medal, 1997

# Summary

- Mentoring helps you learn faster, expand understanding and experience, grow a network, start a reputation, and earn a recommendation
- What counts in finding a job?  
Recommendations, Academics, Experience, Being Fast.
- Get experience before you get a job:  
Open Source, Internships, Volunteer Projects, College Jobs
- Have fun!

*Speaking Notes*  
*&*  
*Additional Material*

# Geek Wear

from [www.thinkgeek.com](http://www.thinkgeek.com) and [store.xkcd.com](http://store.xkcd.com)

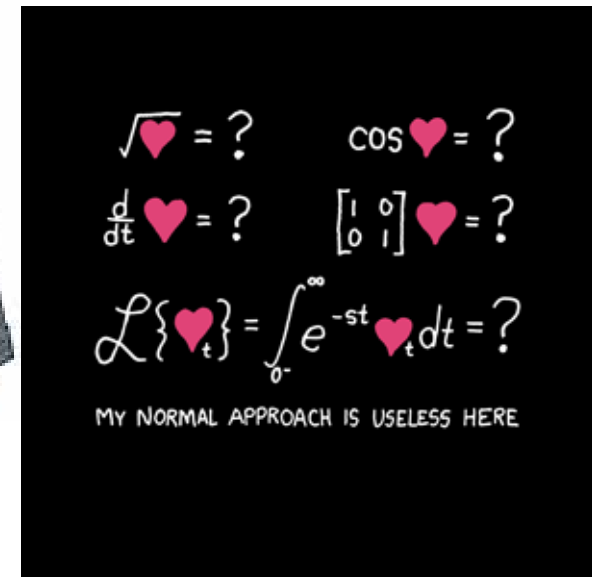


You read my t-shirt.  
That's enough social  
interaction for one day.

<GEEK>



My normal approach  
is useless here.



# Personal Appearance

“Be aware of the effect your personal appearance has on others and, in turn, on you

Permissiveness and dress codes aside, your appearance probably has a far greater influence on how you are viewed by those around you than you could ever imagine. Bear this in mind when you define and present your workplace image. Three rules of thumb will serve you well in this regard.

1. Look at how those in the positions to which you aspire are dressed and groomed, then follow their lead.
2. Dress appropriately for the occasion, whatever it is, including everyday work. When in doubt, slightly overdressing is prudent...
3. Conservative styles and colors in clothing as well as conservative grooming will never be wrong, at least in most engineering circles....

Of course, we all know some very good engineers who are oblivious to such details. You can be sure that their apathy in this regard has been noted by those around them, if not explicitly, certainly subconsciously.”

(from Skakoon and King, *The Unwritten Laws of Engineering*, 2001)

# Finding a Job in Engineering & CS - What Counts?

## - Your academic degree, where you graduated Counts

- Did the interviewer go to the same school as you?

## - Recommendations Count

It's not who you know, it's who knows you (and trusts you)

- Who will recommend you?
- Who will introduce you, stand behind you, give you their good word?

## - Experience Counts

Preferred accomplishment areas include -

- Demonstrated technical excellence
- Demonstrated leadership
- Demonstrated creative ability
- Good recommendations from people with established reputations
- Passion - enthusiasm for technology
- Papers, patents, presentations, publications (objective evidence)
- Work history
- Experience and reputation in the wider technical community, including: open source, industry standards development, architectural review, mentoring. (Being a good professional citizen)
- Ability to communicate (written and verbal, blogging counts!)
- For new graduates - Academic history, recommendations by professors
- *Accomplishment is not expected in all areas but the more the better!*

## - Learning Fast, Solving Problems Fast Counts

- Technical interviews - how fast can you solve a problem?
- How quickly can you become an expert?

# Why Work on Open Source?

“Major motives used to explain why users would voluntarily work on these basic [open source software project] tasks include:

- (1) a user’s direct need for the software and software improvements worked upon;
- (2) enjoyment of the work itself; and
- (3) **the enhanced reputation that may flow from making high-quality contributions to an open source project.”**

- Karim R. Lakhani, Eric von Hippel, 2003

“The ‘utility function’ Linux hackers are maximizing is not classically economic, but is the intangible of their own ego satisfaction and **reputation among other hackers.”**

- Eric Raymond, 2001

# Networking - Real and Virtual

“The more people you know, the more people you meet, the more people you talk to, the more people you enlist as part of your own personal job-hunting network, the better your job-finding success is likely to be. Therefore, you must try to grow your contacts wherever you go. This, of course, is called ‘networking.’ I call it ‘building your grapevine’.”

- Richard Nelson Bolles, *What Color is Your Parachute?*, 2009

“The internet augments real-world social life rather than providing an alternative to it. Instead of becoming a separate cyberspace, our electronic networking are becoming deeply embedded in real life.”

- Clay Shirky, *Here Comes Everybody*, 2008

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