

Professional Interview

Principles of Engineering Block 3

October 29, 2015

Reid Harrison

Interview with: Electrical Engineer Thom Kurtz

Interview Conducted: Tuesday, Oct. 10, 5:30 pm, Trailhead Park, Canyon Creek

General Information:

Interviewee Name: Thom Kurtz

Interviewee's Specific Degree: Bachelor's degree in electrical engineering

Interviewee's Place of Employment: Most recent place of employment is Qualcomm

Interviewee's Professional Business Email Address: thom_kurtz@hotmail.com

Initial Contact: Through a post on neighborhood blog

Professional Interview:

***This is an edited version of the interview and it has been altered from its original form to make it shorter and more organized**

Interview starts

Reid: Can you give me a general description of what the field of electrical engineering is about?

Mr Kurtz: Well, electrical engineering is basically a term you get because of the degree that you take, and when you get an electrical engineering degree there is a certain academic program that you can study. Primarily the in last two years, last three years, most engineers are going to study physics and math to start with and a little chemistry and a little english but electrical engineering is going to focus on particular mathematical skills and you are also going to have a lot of time addressed toward circuits and different electrical academic studies like magnetics, electromagnetics, and communications, so when you say the field it really has a lot more to do with what you study. When you actually go out and get a job, an electrical engineer can wind up doing many different things, including management, or maybe a lot of programming. Many electrical engineers primarily end up doing types of programming. It's probably related to electrical circuits in one way or another.

Reid: Who do you work for and what do you do there? Like, what is your job title?

Mr Kurtz: Well, right now, I am actually not working but my last job, I was a senior test engineer... well actually it was a... senior... well it's been a while but while I was there, I've always been in test engineering and product engineering. I always do test programs, and the test programs always run on certain types of hardware, so it is a combination of programming, and hardware, and developing circuits... Do you know what electrical circuits are?

Reid: Well, that's what we are getting into in class.

Mr Kurtz: Have you ever opened up a television, or phone, or any sort of contraption and looked in there? You're gonna find a board, a flat surface, that is a printed circuit board, and then depending on the technology you're gonna find little electronic things that are soldered on there, and you are always going to have some way that some sort of power, and usually you are going to have an input signal, and the board is going to process that signal, and you're going to have some sort of outputs.

Reid: So, did you test these sort of boards to see if they worked?

Mr Kurtz: Well, I would make the boards, and then, when I worked most of my career I worked on semiconductors, so those are gonna be these little chips... the best job I had most recently I worked for a company called Qualcomm, they are probably the biggest company in the world related to smart phones in terms of the technology, and the licensing, and they developed a technology they called CDMA which is pretty critical, and everybody licenses their technology, so when I was there I was working on power management chips, and we would just have these little, tiny, little chips, that would do all sorts of things to control them... you know smart phones requires quite a bit of very intelligent processing, and power management control because it is doing so much at such high speeds.

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Mr Kurtz: Well, I could tell you the benefits of engineering...

Reid: What are some of the benefits?

Mr Kurtz: Well, from a career point of view, it's usually a pretty lucrative field to be in, especially if you can maintain, keep up with the technology, you know there are always new things coming along and most companies are going to be developing new technologies and new products, so you can get a lot satisfaction out of working with a team and developing new products and making sure that they work and do what they are supposed to and then after you start manufacturing them, that they still work, and when the customer gets them, that the customer likes them.

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Reid: I know some people stay at home and work and others have an office or something that they work in, what was your typical work schedule like?

Mr Kurtz: Well, I think that if you are on a project that is gonna be a decent sized team, it is usually better to work at the office because you're going to be exchanging things, and working together, I mean nowadays it is pretty easy to work from home. You, so if you had a family and you had a kid who was sick or something you could work from home, you wouldn't have to miss work for some family issue, or maybe you were getting your house fumigated or something, you could put your computer in the garage, and work from home, but typically it's better to work around people and the team you're with. as far as the hours go, that varies from industry to industry and from company to company, but in technology, people like to usually think that what they are working on is the very best and it requires the best, and the brightest, and the hardest working people, so often times there is kind of a culture that you know you're working late, you're real dedicated, and you might take some of it home with you, you know, you kind of live and breathe your products, stuff like that you know... not saying that's a good thing. Most of my career, when I work in the semiconductor business, it is a very competitive industry because there is a lot of money to be made, so a lot of people work real hard, so I would usually work about 50 to 60 hours a week, not necessarily six days because I work long days, a lot of long days, and do some at work, but... and then maybe when you'll finish up a project you may have a little break where you are not working so much, but if you want to have a higher quality of life away from work, then maybe engineering isn't the best field to go into.

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Reid: Starting at the high school level, what steps would you say you took with your education to get where you are now?

Mr Kurtz: Well, I got a highschool degree, and then I went and got a bachelor's degree in electrical engineering, and as soon as I graduated I went and worked for a company called Advanced Micro Devices, did you ever hear of that? They have been here in Austin for a long time, and then I just worked real hard and I've been with four or five companies. We worked in Raleigh North Carolina for a while. It's probably now of days it's a good idea to get a, to try to get a masters degree in engineering. There is a lot of competition...

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Reid: If you start again from the beginning, would you do anything differently, or...?

Mr Kurtz: Well, I think I already said that, I never got a masters, and I think that was a little bit of a detriment at times. I have always been a test and product engineer which means that you are a little bit further down the development stage. Usually, if you can get into design engineering, designing the products as opposed to testing them, then that's, there's more demand for that. It is sort of a higher skillset. You probably won't get into a design job out of college unless you have a masters degree, and you might, like if you wanted to be a designer for semiconductors those chips I've been talking about, from microprocessors, or modems for smart phones, or communication devices. That requires a lot of advanced academic work, you know communication theory, or designing chips there is a lot of special skills there, so the more you get before getting after school, the better...

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Reid: I guess you also have already kind of touched on this but, is there any other advice you would give to someone who would like to pursue a career similar to yours?

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Mr Kurtz: Don't overlook that you are a human being and there are other important issues outside of just what your career is... I would hope you don't compromise your personal life too much to accomplish a goal.

This is where the interview ends but we continue to talk for about another fifteen minutes

Personal Reflection

A. What surprised you about the interview?

- a. There were quite a few things that Mr Kurtz said that I found quite interesting, but there are two things that surprised me the most about what he said as well as the interview as a whole. In the fifteen minutes we continued to talk following the official part of the interview, I found out that Mr Kurtz actually got into engineering because he loved music which was rather fascinating because I would never think of that as a reason that someone would gain interest in the field of engineering. The second thing that surprised me was just how awkward it was to have a list of questions that you need answered because in a normal conversation, the conversation has a flow, but when you have to stick to a agenda, it feels

unnatural, and weird when you must break the flow of the conversation in order to ask the next question.

- B. What was the most important piece of information that I you learned from the interview?
 - a. I think the most important information I learned was what electrical engineering was about as it has given me new thoughts on which engineering discipline I might pursue.
- C. How has the interview influenced your feelings about your future career?
 - a. I have found after interviewing Mr Kurtz that maybe computer or electrical engineering may not be the type of engineering for me. Instead I found that chemical or biomedical engineering may be more suitable for what I am passionate about.
- D. How has the interview changed or confirmed your plans regarding your future career?
 - a. Well, I have found that my calling may not have as much to do with electronics and maybe more with other types of engineering. I also may now have to look at getting a master's in engineering.
- E. What is the next step for you to pursue your plans?
 - a. my next step may be to decide which engineering classes I may want to take next year and at some point figure out what colleges have good engineering programs.