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Electrical Engineering  
Cybex International  
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A. Co-op Work Assignment

I was part of the hardware and software engineering department of Cybex International. The hardware/software department works together with mechanical and manufacturing engineering to produce cardio equipment and mobile apps that users will be able to use.

I was working on a piece of a project called Ikabit. Ikabit is meant to replace some of the present circuitry inside the Cybex cardio equipment. I spent some time writing software to communicate with touch screen controllers and some time verifying the LCD interface board. The board will be used to interface with two different touch screens. This means that it will retrieve the touch events (gestures and touch coordinates) and send them back to a computer for processing. It will also drive the display’s LED backlight and send the display data to the display panels. My whole time at Cybex was invested into verifying this LCD interface board.

Training was very hands on. Learning how to code in C/C++ involved my reading online tutorials and jumping right into it and writing some code. Soldering training involved working with one of the technicians who would show me how to solder and desolder components and then give me some junk parts to practice on. Anything else that I didn’t know how to do I would ask for help.

I would go Chris Morgan for most of my questions. His position at Cybex is a senior software engineer. He would answer any questions I had about top level details and also many of the coding specific questions. Sandy Terrace was also very helpful with any coding questions and always made an effort to review my code. Paul Kafog was a great resource as well for any electrical engineering related questions. Larry Raines is the technician at Cybex and he’s great if you have any questions about soldering or if you need any rework done to a board. He’s also a very nice guy and easy to talk to if you just want someone to chat with.

B. Assessment of Learning and Development

My work activity lined up pretty closely with my educational background and career
interests. I was able to do a mix of hardware and software work, which are both very interesting. Of course, I needed to learn many things on the job, but that's part of the engineering experience. Engineers are always learning from each other and asking each other for help. There were a number of times where I would not have been able to move past a problem had I not asked for help. Online forums, mailing lists, and IRC chatrooms are all very important resources to solving problems.

My position at Cybex reaffirmed my interesting in becoming an electrical engineer and gave me insight into how different schoolwork is than work in industry. For example, writing code in school, for me anyway, consists of hacking away at code until it works. When it works, it's ready to be submitted. This is much different than coding at work. Code has to be clean and well written so that the next person looking at it can easily read through it and understand.

This position has also shown me that I do not have all the answers and that I need to have the sense to ask for help when needed. It was also important to learn to take responsibility for the project. No one is around to hold my hand through each step of the process, but people are there to guide me. Given the chance to go through the same experience again, I would spend more time looking at other people's code to learn better coding practices.

C. Life Outside of Co-op

I found housing through a friend of a friend, so asking friends if they know anyone that has an extra room to rent would be fantastic. Otherwise, there's always craigslist. I would definitely recommend having a car around here.

There are social activities if you want to find them. I signed up for a once a week volleyball adult class run by the city of Franklin which was lots of fun. It would also be good to get to know the other Cornell co-ops around the area because there might be a few in driving distance to meet up with. Cybex runs some fitness classes and there are group fitness activities that are available. I went on a run every Wednesday with Cameron, my supervisor, and a few other coworkers. Be ready to be sore the next day running with Cameron, or maybe I'm just out of shape. There's also the showroom with lots of Cybex cardio machines and weights that is open to employees that is good to take advantage of.

D. Evaluation
My favorite part of this job was being able to apply what knowledge I have of electrical engineering and coding and to gain exposure to how life is after school. It's also really cool to write a program to retrieve touch coordinates and be able to see the exact coordinate my finger is on when it is touching the touch screen. The hardest part of this job is making sure that other people working on the project can pick up right where I left off. This means making code and documentation clear. While it is hard, it is also very necessary, so I'm glad that I had to go through this experience.