I completed my first term of co-op at RiskMetrics Group (RMG) at their office located in Cambridge, MA. The company is a provider of financial services to its clients with the use of the software built by the software engineers of the company. My job title was Software Engineer on the Platform Development group.

My job was mainly related to a software product called WealthBench that was developed by RiskMetrics. This product is essentially a wealth management tool used by financial advisors, who are clients of the company. The tool provides functionality such as risk measurement, asset allocation, long term plans for a particular portfolio, etc. With the help of this tool, financial advisors are able to provide their clients (investors) detailed reports about how their portfolio is doing, how it could handle certain risks and how it could be adjusted to avoid risk.

Throughout my co-op term, I was assigned to work on a software tool called "Report Definition Editor." For the most part, I was the only programmer working on the project; however, there have been times when my supervisors also contributed to make sure that the tool would run smoothly with other products of the company. The project was actually initiated as a summer project for interns and was passed on to me when their work term ended. The main purpose of the tool was to provide financial advisors a user-friendly interface in which they could easily adjust the contents of a report definition based on their clients' needs. The report definition editor would generate an XML file which would then be used to create the report definition that the financial advisor needs. With the help of this tool, financial advisors will save plenty of time that they would normally waste trying to adjust the technical source files of a report definition.

I was assigned two supervisors for the first term of my co-op: Brendan Shea and Philipp Hanes. We had daily meetings at the end of each day to talk about new features to be added to the product and possible areas of improvement. They were completely aware of the project's progress every step of the way and provided me with very valuable input. Their feedback not only helped me improve my programming skills but also made the project a lot more useful for the client. Having meetings so often also made it possible to talk about the project in detail and definitely helped my learning. I was also able to talk to Mary Garner, our office's public relations coordinator, about any other problems I had such as paychecks, IDs, etc.

We also had weekly Developer Lunches every Wednesday. These meetings would be conference meetings with the participation of every office of RiskMetrics Group in the USA. Every week, one of the employees would pick a software related topic and put together a presentation about it. They were very valuable both for their educational content and for learning about other projects in the company.
The work experience was definitely very beneficial for my professional development. For the first time, I was able to work on a very large-scale project with other coworkers. Even though the project was very similar to my assignments at Cornell in terms of technical difficulty, it showed me that there are lots of other details to consider when working in a professional environment. Things such as user feedback and teamwork were aspects of my experience that I had not been exposed to before. It also taught me that it is essential to take initiative while working at a project and constantly strive to improve things for a smoother user experience.

I really wanted to find housing in Boston and not outside the city in order to be able to experience the life in the city. Consequently, it was relatively difficult to find an affordable housing option for only 4 months. I exhausted resources such as craigslist.org, and other various housing sites. Luckily, I found roommates.com which helps people find roommates and housing options together. I found a sublet on Marlborough St (only two blocks away from the popular Newbury St) for a very reasonable cost. I shared the apartment with one more person who worked at a big financial firm in downtown Boston. It only took me around 25 minutes to get to work using the subway. Boston has a very good public transportation system which you can use to get to anywhere in the city.

Boston is a great city to explore especially if you haven’t spent much time there. I was lucky to have close friends who went to Boston University and Harvard University. I ended up spending most of my time with them after work and on the weekends. I would say it is quite easy to socialize in Boston because there are so many colleges around. We also had a “Fun Day” at work where all the employees in my department took a day off to rent Segways and ride them around the city. Towards the end of my term, we also had a Christmas party.

My co-op experience at RiskMetrics for the first term was very rewarding. I got to work on a very crucial tool for the company and luckily even witnessed it being used by my coworkers. With the help of my supervisors, I learned how projects are run in a large company like RiskMetrics. Even though I felt confident with my technical knowledge, I realized that there is a lot to learn regarding the development cycle of a software product. I’m very much looking forward to going back this summer and working on another challenging project.
Work Assignment

I've been working at Riskmetrics Group in downtown NYC this semester in the Platform Development team, a subset of the Research and Development department. Riskmetrics is a leading provider of risk analysis to financial markets, striving to "improve financial markets by bringing transparency, expertise and access to all market participants." My particular assignment was a continuation of 2 summer interns' research project: To explore several open source databases and run test cases on them to determine whether they were fit to be used in production by the company. More specifically, I researched Apache HBase, CouchDB, and Cassandra, 3 non-relational-databases, and saw how easy they were to use and how reliable they could be.

To explain a bit, in the past couple of years many open-source cloud-computing services and non-relational databases have been developed to help websites combat the problem that is "big data." Big data refers to petabytes of data (thousands of thousands of gigabytes) generated through search engines like Google and Yahoo, online markets like Amazon and EBay, and social media sites like Facebook and Twitter. When you have that much information to store and manipulate, the typical Oracle relational database hampers your progress as you try to spread your data across many machines and access your data quickly. Google and Amazon each released academic papers between 2003 and 2006 describing their methods of approaching the problem of storing and accessing all their data quickly and safely, while protecting against inevitable machine failure. Since then, people working across the globe have contributed to develop these open source clones of the Google File System, Google's BigTable, and Amazon's Dynamo, or mutations of the them. A few systems are actually being used in production at places like Yahoo, Facebook, Twitter, StumbleUpon, and Digg. Many forward-thinking companies are now asking themselves the question "Are these systems right for us?"

Over the summer, Beijing Masters Candidate Yifeng Fu and former Cornell co-op Charles Xeller ran tests on the open-source cloud computing platform Apache Hadoop, a clone of the Google File System that implements Google's parallel programming method called "MapReduce." My first task was to learn as much as I could from Yifeng in his last 2 weeks here. It was slightly overwhelming at first; I was unfamiliar with Hadoop, had not been a programmer for very long, and I was completely new to Linux, the operating system we use. So in a sense, my training was just watching Yifeng, watching the presentation he gave over the summer as well as the one he gave as he left, and trying hard to repeat what he had done. Unfortunately, he left just before I got the hang of things, and I didn't come up with all the questions imperative to understanding Hadoop until he went back to Beijing. But I think that worked out for the best, because it helped me develop the skill of figuring things out all on my own.
Although I was not formally assigned a mentor, I always looked to my boss Mark as a mentor and guide. He was always very supportive of me and understanding of my frustrations, and jubilant about my successes. A large part of my success here must be attributed to Mark because he encouraged me to use my strengths to solve problems, even the strengths I have that don't directly relate to Computer Science. I was constantly pinging him with status updates and asking him generic programming questions, and he always had a way of guiding me towards the answer which was much more beneficial than him just telling the answer to me.

**Learning and Development**

Before now, I didn't really know where my interests were in terms of finding a career. I just recently affiliated with ISIT in July, and I had very little experience programming up until this term. My experience here has been invaluable for me because it opened up the world of Information/Computer Science to me and showed me very important new and exciting technologies that really fascinate me. Don't get me wrong, I've had days where nothing worked at all and I was just about as frustrated as could be, but that made my successes that much more wonderful. I think that's a very important lesson for all engineers; you're going to have to deal with days, weeks, and possibly months of failures, but if you keep attacking your problem with enthusiasm and you learn from each mistake you make, you will find success.

My experience here has given me a path to follow professionally because I now have a reason to learn more things. I now want to challenge myself and take classes at school that I know will directly benefit me in the workplace. I am also much more self-confident, knowing that on my first day I had so little experience but I have grown to become a resource for others. Personally I learned that no matter what the situation, the most surefire way to be successful is to be myself. Once I was able to relax and enjoy the presence of other co-workers and open up to them as the kind of silly, kind of smart person I am, I was able to really relax and enjoy my job. If I was to go back in time and do this whole thing again I would change nothing, because I would rather fail somehow every day for the rest of my life and learn from my mistakes than succeed at everything I did. As my mom always says "If it was easy, everyone would do it."

**Life Outside of Co-Op**

Outside of my job, I lived in Woodside, Queens with my brother. That was nice because it was cheap, and it provided me with a social life. Plus I got to spend a lot of time with my brother. The downside is I slept on a futon in the living room, with no privacy. That kinda stunk. My main advice here is that you can't overlook the importance of both a social life and it's opposite, privacy. If there's anything I really lacked this term it was privacy, and that definitely had its downsides. But also, my darkest days weren't that dark because my brother and his wife and friends were always around to help me feel better. Having friends/family around makes life better. It just does.

In terms of travel, I love the subway but I walk when I'm not in a rush. Knowing the subway map is totally cool because I can show off my street-knowledge to my clueless friends from out of town. With the money I made from my first paycheck I got an iPhone and I really suggest getting some sort of handheld device as such because walking around town is a piece of cake with Google maps' GPS feature. I also use social apps like Yelp! and foursquare to find good restaurants and places to get coffee. Without those, I would have no reference for which places were worth going to. Technology is great!

As for what to do socially, my passion is comedy and I consider myself a comedian. One of my goals this term was to explore the comedy realm of New York City and see what I
could learn from it. At school, I'm the director of the Whistling Shrimp, Cornell's only improv group. Here I was able to take 2 improv classes at the Upright Citizen's Brigade (UCB) Theatre on W26th street in Chelsea (one was taught by Cornell Chem-E Kevin Hines, who graduated in '97 I think). The classes were incredible: I met a lot of weird but funny people, got to perform on the UCB stage 3 times, and with my classmates I was able to perform at the People's Improv Theatre 3 times as well as at a bar/stage in Long Island City in Queens called the Creek.

In addition to that, I pushed myself to do stand up at a few open mic nights, then actually performed at a more professional show at Comix Comedy Club on 14th street. There, I brought 15 people to come see my show both times and as a result got free professionally made DVDs of my performances that I can use to promote myself at other venues. It's been incredible to perform, gain experience, and make connections in a city so full of competition and talent.

If you've never been to the UCB theatre or to Comix, I suggest you explore them. Better yet, if you are passionate about something outside of work, you can find it in New York City. Just go explore and take every opportunity you can. I also say, take every opportunity your job offers you. We went out to play flag football the day before thanksgiving, and I had a blast! Although I'm wimpy and afraid of getting hurt, I was able to help my team and just have a fun time (not to mention get free pizza and wings after). Also, our holiday party was a lot of fun, even though I'm not yet 21. I think it's important to just take every chance you get to have fun and learn new things during your co-op, because that's what it is all about.

**Evaluation**

The best feature of my job was it's flexibility. I have a device that allows me to work from home, or from any computer with an internet connection for that matter, so I was able to go up to Cornell on a thursday night and work from Mann library Friday during the day, have lunch with my girlfriend and spend the rest of the weekend seeing my friends. My boss was very lenient on what times I had to come in or leave: I just had to get my work done. The worst feature of my job was simply the frustration of the software I was researching, but at the same time that frustration helped drive me to be productive and innovative. I had a really good experience and I don't think it's fair to label anything "the worst."

I really enjoyed the co-op experience. Working at Riskmetrics has been great, I'm super pumped to come back; living in the city has been just as awesome as I expected it to be; and learning all about work and life after school has been marvelous. I would recommend this entire experience to anyone.
I completed my second term (10 weeks) of co-op at RiskMetrics Group (RMG), later acquired by MSCI, at their new office located in Boston, MA. The company is a provider of financial services to its clients with the use of the software built by the software engineers of the company. My job title was same as the one in my previous term, Software Engineer on the Platform Development group.

My assignments were mainly related to a service called Position Information Service (PIS) that was in the process of development by the company. The service aims to store information about large sizes of positions for clients’ use. The primary goal of the team that was working on this project was to make the service as efficient and fast as possible, so that it can handle large volumes of searches, data manipulation and application of risk scenarios on the fly. Overall, there were many obstacles to accomplishing this task as there were various sources of information that would have to be utilized to gather data.

For my second term, I was assigned to work on a software tool called “Pistol.” This would be an internal tool used by the software developers at the company. Unlike my previous term, I had to initiate this project from ground up. For the most part, I was the only programmer working on development of the tool. However, I had to work very closely with other developers in order to receive feedback and shape the functionality of Pistol based on their needs. The main purpose of the tool was to provide a simple but extensive user interface that would test the performance and functionality of PIS as it was developed further. With the help of Pistol, developers could easily pinpoint causes of errors that broke PIS and make changes accordingly. It would be especially useful for testing purposes and would substantially accelerate the development cycle.

I worked with one of my supervisors from my first term: Brendan Shea. Whenever I ran into specific problems, I was able to easily talk to him and get assistance. I also participated in biweekly team meetings for PIS and discuss the progress of both PIS as a whole and Pistol, the tool that I was working on. Those meetings were especially helpful as it helped me get a good understanding of how the tool was used. With that information, I set accurate goals for my project and tried to create an application that would fit the needs of the users. I also tried to take more initiative and propose functionality that could be useful to include in the project. In turn, I received input from other developers, who were going to be the users of the application. Those discussions mainly led the progress of my project and served as a way to constantly assess my work.

Just like my previous term, we had Developer Lunches every Wednesday. These meetings would be conference meetings with the participation of every office of RiskMetrics Group in the United States. Every week, one of the employees would pick a software related topic and put together a presentation about it. They were
very valuable both for their educational content and for learning about other projects in the company.

The work experience helped me get exposed to technologies that I had not dealt with before and get a lot more familiar with them. I mainly used a JavaScript framework ExtJS to build the front end of Pistol. I also had to deal with Tomcat, Cassandra and Java servlets to support the back end of the application. It was the first time that I worked on any of those technologies in detail. However, with the help of my supervisor, the learning curve wasn’t steep at all, and I was able to produce working code in a very short period of time.

It was also a valuable experience to be a part of a large project team. Even though my individual assignment was distinct from that large project in many ways, I had to be aware of the general progress and problems. This helped me get used to working with many developers and set deadlines for my work.

Having lived in the center of Boston in my first term, I really wanted to find housing at a similar location again. Over the summer, it was easier to find a place to live because many college students wanted to sublet their apartments. I used craigslist.org as my main resource as well as Facebook Marketplace. I was lucky enough to find a studio that a Boston University graduate student was subletting. The studio was in a building for graduate housing for Boston University. Not only was it in a very central location, but also it was very affordable. I used the Green Line in Boston to get to work, and it took me approximately 25 minutes to get to the office.

I think Boston is a wonderful city to live in for your co-op especially if you haven’t spent much time there. There is a large college scene thanks to many colleges around (BU, Harvard, Emerson, MIT, etc.) I spent most of my time after work either with my friends or at the gym. I highly recommend going to Celtics games as well if you are a basketball fan.

My second term at RiskMetrics was as good as the previous one. The only concern I had was that, coincidentally, RiskMetrics was acquired by MSCI in the middle of my summer term. Naturally, everyone in the company had to deal with the aftermath of such a large acquisition. Therefore, it did get a little chaotic at times. However, I think that my supervisor did a wonderful job of team management and kept everyone on track in spite of all the distractions.

My overall co-op experience was also very beneficial for another reason. After spending 7 months at RiskMetrics, I decided that having a career related to finance isn’t a good choice for me. Even though I worked on software development, the finance aspect of my job wasn’t exciting for me at all. I think this was a very crucial lesson to learn right before I started seeking full time employment opportunities.
My second term working for Riskmetrics was profoundly different than the first. In addition to just turning 21, living in the East Village (instead of in Queens), and it being summer, my coding skills were sharper, my project was more interesting, and the company had just been acquired. It was as though I had a completely different internship. In addition to describing what I’ve learned through the work I’ve done, I’m going to discuss what I’ve learned about corporate life and culture through watching it change before my eyes.

The project given to me was much more exciting than my first term. With higher expectations, my boss assigned me to work on an actual service that was used internally. What I did was actually going to make a difference in the company and that felt good. I worked on making an internal search engine easier for users to find the information they wanted. I got to research a lot about good search practices like faceted search engines, and I gained experience using Apache Lucene for the backend indexing and ExtJS for the front end styling.

Because of the additional stress on my boss and everyone else, however, there were times when nobody was available to answer my questions. Often the problems that blocked me were trivial configuration and password issues that could only be solved by people in the company, but nobody was available to lend me a hand. I learned a lot from being on a team that wasn’t very responsive to me: the other people working on this service were all in Beijing so our only communication was through e-mail which they often neglected to respond to. Despite this, however, I forced myself to learn how to interpret the code written by others and turn to the plethora of online sources available to me. It was only after I had confidence in myself that I actually got things done: the last 3 weeks of the summer were certainly my most productive, and in them I impressed my boss a great deal. The lesson I learned there was that the only thing blocking me from productivity is the mental block I had in my head. As a Cornell Engineer, I have the ability to solve problems independently; I just need to believe in myself.

The first day of my summer term was coincidentally the first day MSCI was integrating with Riskmetrics. I went to a meeting where our new CEO discussed the exciting new changes that would be occurring. I guess the best way to describe the whole acquisition process is to frame it like this. Riskmetrics was one of those fun-loving and cool companies everybody always hears about. Very young, very fun, the culture was about having fun and changing the world. We had parties and wore whatever we wanted to work. We had a Wii and a foosball table to keep us entertained when we needed a break. In other words, Riskmetrics was like a bunch of kids. MSCI on the other hand, was the group of adults. They always dressed a certain way, they never have parties, and fun has no place in their corporate culture. And their culture is the one that prevailed.
In days I saw people who had been faithful and crucial members of the Riskmetrics community quit, some without jobs to go to. The culture was changing rapidly and the environment filled became full of stress. But my team moves forward and continues to do business as usual. What really affected me was the idea that these people worked here for a reason, and that reason was taken away. In my search for jobs after college, I will keep corporate culture in mind – something I had no concept of in the past.

On a lighter side, my life outside of work was incredible! My friend and I got an enormous apartment in the East Village, which is one of the coolest places to be in NYC. Lots of young people, cheap fun bars, and outdoor restaurants and activities made nightlife a blast. Additionally, I took an advanced improvisation class at the Upright Citizen’s Brigade Theatre in Chelsea, and honed my skills as an improviser. My group from Cornell, the Whistling Shrimp, got to perform in the city 3 times this summer, and I performed with my class twice. It was an invaluable experience, because my true passion is comedy, and my plan after college is to work during the day and do comedy at night and once again I was able to comfortably do that. The only drawback was that my apartment was quite expensive, and I also had to pay rent for my house in Ithaca over the summer. I wish my employer had given us a hand in finding apartments, but we ended up having a great experience.

The best feature of my job experience was definitely my opportunity to learn to code better. I was given a list of tasks to complete, and then had complete independence to approach the problems. Alone, I sifted through forums and books and tutorials to come up with solutions. I came across different coding styles and patterns that are going to be invaluable to me in my work ahead. The amount I learned from simply searching for answers was tremendous.

The worst feature of my job experience would just be the frustrations of getting things to work when there’s only one answer and it’s impossible to reason alone. I assume this is going to be an issue wherever I go, but I know now that it’s ok to be frustrated and to pursue answers. Setting up an environment in which to work is important and

I’ve learned a ton through my work at Riskmetrics. From strengthening my code and problem-solving abilities, to learning the importance of corporate culture and understanding my place in a team, I’ve matured immensely. I will never forget the experience I’ve had here, and I don’t know how I can thank the people that have helped me here more.