IT Profile – Mike Kirkup

Occupation: Software Developer

Company: **Research in Motion Limited**

Based in Waterloo, Ontario, Research In Motion Limited is a leading designer, manufacturer and marketer of innovative wireless solutions for the mobile communications market. RIM provides solutions for seamless access to time-sensitive information, including E-mail, messaging, Internet and intranet-based applications through development and integration of hardware, software and services. RIM technology also enables a broad array of third party developers and manufacturers around the world to enhance their products and services with wireless connectivity. RIM's portfolio of award-winning products includes the RIM Wireless Handheld(tm) product line, the BlackBerry(tm) wireless E-mail solution, embedded radio-modems and software development tools.

Founded in 1984 RIM operates offices in Canada, the United States and England.

What do you do?

I am a software developer within the Wireless Security group. We ensure that RIM solutions provide the security that our customers want. This ranges from securing the E-mail across the wireless network to securing Web connections to external Web servers. Our group also ensures that RIM devices contain the necessary cryptographic functions necessary for third party developers to write their own secure applications.

How do you use computers in your work? The majority of my work centers around working on the computer. As a software developer, I spend most of my time designing, implementing, testing and debugging software that I have written. These aspects of my job require me to use IDEs (Integrated Development Environments) that provide me with the ability to develop and test my code on the device. I also use my computer for E-mail and other administrative tasks required by my workplace.

RIM is a very E-mail-centric company due to its invention of the BlackBerry, which allows people to send and receive E-mail even when not at their computer. This device has caused a radical change in the corporate culture, which drives the expectation that people will respond to E-mail in a timely fashion. It is not uncommon to receive several hundred E-mails in one day.

Have you developed your own software?

Yes, I have developed my own software. I have written programs that provide many different functions. The software is very unique in that we are doing groundbreaking work. Most of the software written right now is developed for the kind of desktop platform where the CPU, memory and other attributes are top of the line. On the other hand, we are writing programs for a device that has a very limited CPU speed, limited memory and limited bandwidth. These constraints make my job very interesting and challenging because they require me to think of different ways to solve the problem. Our group needs to come up with very unique solutions to common problems that will work on our constrained devices. In the end, it is our customer who really benefits because we are able to provide applications and functionality that are normally considered to be too hard to place on the device. We try to make their lives as easy as possible and it is through our work that we are able to that. And because some of the work that we do is groundbreaking I have several patents pending in my name.

What do you like best about your work?

I love the challenge of my work. Working with a constrained device, places a whole new spin on the existing problems people are trying to solve. As well, I enjoy the people I work with. RIM provides an

excellent working environment and the people here at RIM are all top notch. In fact, RIM has shown that it is willing to lead the way into the future by accommodating its employees with special working conditions. I think I am an excellent example of what lengths RIM will go to in order to satisfy its employees. Every two weeks I spend about two days at our main R&D facility in Waterloo attending meetings and catching up with colleagues. The rest of the time RIM lets me work from my home in Kingston, Ontario to accommodate some personal requirements.

What are the challenges?

We are trying to develop software for a constrained device. With its limited memory, CPU speed, and bandwidth we have to find new solutions to problems in order to provide the same level of service to our customers. As well, we are required to ensure our programs are as small and efficient as possible. Desktop programmers are allowed to get away with sloppy programs because the speed and memory of that machine will accommodate the bad programming. However, in our device the same program would fail miserably.

How long have you been using computers and software?

I have been using computers as long as I can remember. I used to play Pac Man on an Apple II when I was growing up and even remember writing little programs out of a monster book for my computer when I was 8. My mom used to help me type because she could type faster than I could. As I grew up my interest in computers grew with me and I found myself taking all of the computer classes I could in high school. A lot of success in computers in a high school setting, prompted me to think that the University of Waterloo would be the best place to take my interest to the next level.

Advice for people considering this field

People should find something in this field they enjoy and simply go after it. I have found that by combining my love for cryptography and programming I was able to find a job, which was both challenging and enjoyable.

What it takes to work in this field

The combination of cryptography, programming and small device or embedded software development gives my job pretty tough requirements. However, it is exactly these three things that combine to make my job incredibly exciting. The field of computing or IT in general is so broad that I could not make recommendations as to what a person should know. All I could say is that if you are interested in this field, then do some research. And by doing your research I am sure that you will find that you are already using computers to do that research.

What the future holds

In five years, I see myself helping to develop the next level of cryptography for a constrained device backed by the knowledge that as computer power gets better and better we may be able to provide levels of security unseen so far in computing.

The future may surprise all of us, and I look forward to that challenge. My field will most likely look very similar to what it looks like today. People working in computing have been struggling with some very fundamental problems (complexity of design, estimation procedures, testing and debugging) that we will need to iron out before we can proceed into a new era of computing. I believe that the next five years in our field will be marked by a trend of going "back to basics" where we try to simplify the computing in our lives.