I started programming computers in 1978 at the age of 13: More precisely the Radio Shack TRS-80. Now I didn't actually *have* a TRS-80, though it was on my Christmas wish list, but rather I had a book that explained how BASIC worked. It was the beginning of my lifelong obsession with computer systems that continues to this day.

By the time I had access to a computer system, I was well prepared to program and a combination of tenacity, creativity and obstinacy enabled me to write customized commercial applications for a variety of small companies – and that was all before I had finished high school. In the early 1980s computer science programs were still unusual to find. Thus, I ended up studying mathematics and what computer science I did pick up were rather more mathematical in nature (e.g., recursive function theory, complexity of algorithms, etc.)

Chicago did have a graduate CS program, and I was accepted into the PhD program. However, I decided to defer pursuing the degree as I knew that I was not ready. While it's been longer than I had anticipated, my desire to do so still remains and now I am ready. The benefit of the intervening years is that they have permitted me to learn skills that will serve me well: the ability to analyze complex problems, a broad range of systems programming experience, communicating effectively with both technical and non-technical audiences and the ability to work to deadlines.

I spent my first two years after completing my undergraduate degree working for David Cheriton at Stanford. During that time I developed a primitive kernel debugger for The V Operating System and was involved in a UNIX implementation of Dr. Cheriton's VMTP transport protocol, a reliable transport protocol that worked over IP-Multicast (Dr. Steve Deering's work at the same time in the same group).

Subsequently, I joined Transarc in Pittsburgh, PA, a start-up company spin-off from Carnegie-Mellon University. The file systems team was led by Dr. Mike Kazar and I was involved in the AFS file system (the commercialization of the Andrew File System) as well as the follow-on distributed file system (DCE/DFS). I am co-author on two papers from the DCE/DFS work (*DEcorum File System Architecture Overview* and *The Episode File System*).

Since that time my primary involvement has been in developing file systems and related technologies for the Microsoft Windows platform as a Consulting Partner with OSR Open Systems Resources, Inc. In 2009 I opened the Vancouver, BC office for OSR. During my time with OSR I was deeply involved in commercial file systems development, including teaching classes, developing both local and network file systems, as well as file systems filters, including robust support for layered file systems. A substantial amount of my work for the past ten years has been in constructing robust, workable models for simplifying the implementation of transparent per-file encryption in the Windows operating system. My latest work in this area has led to the development of a generalizable isolation model, in which a single file may simultaneously present multiple distinct views of its data. For example, in encryption, one view may be the encrypted data of the file while another view may be the decrypted data. This is useful for protecting content from inspection, such as when a document is attached to an e-mail, yet it remains fully functional for your word processing application. Because this is done inside the Windows operating system, applications themselves do not need to be modified. The systems level software that makes this possible manages the views and ensures coherency between the separate disjoint views as well as maintaining existing file system semantics on Windows.

I applied to the PhD program at UBC three years ago and received my rejection letter on May 1, 2014. As is common with such letters, it did not explain why I was not selected, leaving me to ponder what I should do to pursue my vision. It is my hope that this time I have augmented my own skills sufficiently to gain admission.

Since I last wrote my statement of interest in December 2013 I have made a concerted effort to broaden my skills and verify that I have the drive necessary to successfully complete research that will contribute to the field. Along the way, I have identified several areas of interest within the systems space as well as broadened my exposure to other areas of CS that will serve me well as I pursue my goals to contribute to our broader understanding.

Beginning in Spring 2015 I have been enrolled in the Georgia Tech OMSCS program, both as a student as well as a Teaching Assistant for Dr. Gavrilovska's class *Graduate Introduction to Operating Systems*. This is a part-time program. I continued my role at OSR until November 2016.

My involvement in the program has been very helpful in broadening my own skills as well as helping me confirm my passion for research. Indeed, Dr. Gavrilovska has strongly encouraged me to pursue my goal of completing my PhD.

One of the comments on the UBC CS NSS site states that you look for "The ability to write an interesting research statement that cites relevant published research." To that end, I have prepared a research statement regarding my interest in Semantic File Systems for your consideration. To be successful, a semantic file system requires a strong adaptive search component. Because my experience is in the systems space, I have increasingly tailored my studies towards expanding my knowledge outside systems into Artificial Intelligence, with classes that emphasize cognitive modeling, human computer interface, and artificial intelligence. While this hardly makes me an expert in any of these fields, this exposure to new areas will help me when conducting cross disciplinary research, such as I envision in the area of file systems.

I appreciate and understand that research direction can change based upon my advisors' interests, funding and other extrinsic factors. My interests remain strong in the systems field, in particular my area of focus continues to be finding ways to make computing systems more reliable, more efficient and more useful. I have a demonstrably strong set of skills for successfully engaging and completing this task: experience across OS platforms, development of real-world software, and the ability to express my findings in both written and oral form.

As examples of potential research interests, I am working on two research statements that I have made available online:

- Semantic File Systems
- Transactional Operating Systems

Thus, I seek to become a member of your PhD program both to fulfill my own goals as well as further the goals of my advisor, obtain the funding necessary to do my research and represent my department and University in the best possible light.

While it's been many years since I picked up that BASIC manual for the TRS-80, my fascination with computer systems has not waned. I've been fortunate to "grow up" with the computer industry and work with many talented and gifted people. I look forward to working with more such people during my studies at the University of British Columbia.

The latest version of this Statement of Interest may be found here.