Chris Matthews

3929 Rowley Rd.
Victoria, British Columbia
Canada V8N 4C3
Home: 1 (250) 385-9427
cmatthew@cs.uvic.ca

Objective To pursue a career in an industrial research and development setting after graduation.

Research Interests

- Cloud Computing (IaaS) – novel cloud software structure, utilization in the cloud
- Distributed Systems and Clusters – in terms of scalability and virtulization
- Virtualization – novel software structure and communication in virtualized systems
- Systems, programming languages, concurrency and scalability
- Aspect Oriented Programming and its applications in systems code
- Modularity, and composition of systems code, and tool support for systems code

Education

University of Victoria   1999 – Current

- Currently in the final year of a PhD
- M.Sc. C.Sc.
- B.Sc. C.Sc. with distinction

Publications

To see the most current list of publications or my thesis work please visit the papers section of my website.

- Overcast: Eclipsing High Profile Open Source Cloud Initiatives
  Workshop on Cloud Computing at OOPSLA 2009
- Virtualized Recomposition: Cloudy or Clear?
  Workshop on Software Engineering Challenges in Cloud Computing at ICSE 2009
- Quantifying Artifacts of Virtualization: A Framework for Mirco-Benchmarks
  The 2009 IEEE International Workshop on Quantitative Evaluation of large-scale Systems and Technologies at AINA–09
- Portability Events: A Programming Model for Scalable System Infrastructures
  Workshop on Programming Languages and Operating Systems 2006 workshop at ASPLOS XII
- HEY You got your Paradigm in my Operating System!
  Workshop on Programming Languages and Operating Systems 2005 at ECOOP 2005

Teaching Experience

- Sessional teacher for UVic's CS2 class
- Teacher Assistant for UVic's operating systems class 6 times
- Guest lectured in several graduate level classes
- Substituted for professors in operating systems class 10+ times
- Comfortable speaking in front of 300+ people
- Teacher Assistant for classes at all levels of computer science
- Redesigned a UBC 3rd year software engineering course's curriculum
- Teacher Assistant for UBC's introduction to Software Engineering class with a new experimental curriculum
- Regular participant in departmental research group on education

Awards	
	• Google Summer of Code 2009 sponsored by the Eclipse Foundation
	• University of Victoria Fellowship 2004-2005
	• Raytheon Canada Limited Scholarship
	• UVic Computer Science Public Speaking Award

Technical Skills *(a brief overview)*

- Worked on code in large projects: building Linux loadable kernel models, extending GCC with new functionality, and adding new functionality to the Xen Hypervisor
- Operating systems experience: administered most versions of MS Windows including server editions, Linux servers running several popular distributions. Experience coding in many different JVMs, in the Linux kernel and in IBM Research's K42 kernel with emphasis in virtual memory and concurrency management
- Worked with Amazon's EC2 API, built virtual machines from scratch, worked with Eucalyptus and a built private cloud
- Administered several small and medium sized (40 workstations) networks, WINS, DNS, DHCP, Active Directory and Windows Domains, IIS, FTP, proxies, file sharing, remote computing (RDP, Citrix), database access, basic routing, gateways, hubs/switches, wireless, firewalls, network security, virtualization, NAS and SANs
- Java and many related technologies, AspectJ, C, C++, Python, C#, DOS batch, shell scripting, assembly, UML, SQL and a number of DSLs
- Compiler development in Java with ANTLR, and in C, and JVM development including garbage collection, threading, and basic JIT and byte code interpretation
- Tools: Eclipse, NetBeans, CVS and CVS administration, Subversion, JUnit, Ant, GNU tool chain and GCC, Javas RMI, CORBA, .NET Remoting, written Eclipse plugins and regular OSGi modules
- Databases: PostgreSQL and administration, MySQL, MS-SQL
- Web design: HTML, PHP, CSS, JavaScript, MivaScript
- DICOM medical imaging, medical record keeping, system and data reliability

Recent Experience

2007	Google Inc.	Mountain View, CA

Platforms Group: Software Engineering Intern

- Worked on the Tuples project for GCC (the GNU Compiler Collection). This project entailed working with several compiler engineers to change the data representation in the compilers middle end. The primary goal of the project was to reduce the memory consumption of the compiler to facilitate a future GCC project (the LTO project) that will increase the compilers memory consumption. The work was primarily self-directed. My code is committed in the GCC public repositories, and will eventually be integrated into the trunk of the GCC project.
- Worked on a side project to expand a Google benchmark system. This project was also mostly self-directed.

2005	IBM Research T.J. Watson	Yorktown Heights, NY

Intern with the Advanced Operating Systems Group

- Applied novel scalability techniques used in operating systems code to user level applications
- Produced a Linux library, which I showed can increase the scalability of user level programs running on cache coherent SMP hardware
- Publications are available on my website

Researcher
- One of two researchers working on the AspectC project. AspectC is a research compiler intended to introduce the most advanced features of modern Aspect Oriented languages like AspectJ into C. While working on the AspectC project, I was managed by Gregor Kiczales who is one of the original creators of Aspect Oriented Programming.
- This project entailed producing a detailed programming language design that took nearly 6 months to create. This included tasks like collecting detailed statistics about modern uses of C and the CPP, and conducting thought exercises on the tradeoffs involved in using different linguistic elements.

Volunteer Positions

I am active in the research community and regularly volunteer to organize events. I co-organized the ACP4IS workshop at AOSD08. I co-organized parts the SOSP09 student program including their 90 student volunteers and parts of the travel grants.

I have volunteered as the webmaster for the Aspect Oriented Software Association. This involved web design for their AOSD.net website, which is themed around modern industrial and academic AOP, and the AOSD Conference.

I also volunteered as a web designer for the Victoria Pet Adoption Society. This site is their primary means for finding homes for animals.

Interests

Beyond my work, which I enjoy the most, I spend a lot of my free time exploring the outdoors and engaging in a wide range of sports and activities.

References

To protect their privacy, these are available upon request as a separate document.

More

For more information visit my website: `http://www.christophermatthews.ca`.