

Zachary D. Blair

Surrey, BC, Canada
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TECHNICAL SKILLS

- **Languages:** C, C++, Perl (CPAN contributor), XML and Regular Expr. Experience with Java, JavaScript, Visual Basic, and JSON
- **Operating Systems:** Embedded Linux (WindRiver, Debian), VxWorks, pSOS
- **Database Environments:** SQLite, MySQL, Perl's DBI module
- **Development Tools:** Visual Studio, GNU toolchain, CVS/SVN, Git, JIRA
- **Frameworks:** Nokia Certified Qt Specialist, OpenCV, Catalyst (Perl), Swing
- **Design:** UML, Usability Engineering
- **Microcontrollers:** Atmel AVR, Microchip PIC, HD44780-based LCDs
- **Network Protocols:** Debugging TCP/IP and SIP with Wireshark and Nmap

PROFESSIONAL EXPERIENCE

Software Developer Dec'09–present
Polycom Canada, Unified Communications division, Burnaby, BC

- Designed and implemented significant parts of a custom UI framework for Polycom's VoIP phones using Nokia's Qt application framework, including developing custom widgets, XML- and JSON-based IPC mechanisms, and artwork using the Gimp and Adobe Illustrator.
- Implemented a new gesture-based navigation system that enabled users to swipe between different "panes" of information – such as calls, lines, or a web browser.
- Developed a new contact directory system, using an embedded SQLite database, a Qt-based UI, and an XML-based serialization format.
- Maintained and debugged embedded IP telephony software on ARM, MIPS and TriMedia systems running WindRiver Linux, VxWorks, pSOS, and WinCE.
- Authored software requirement specifications for two major new features: a contact directory, and a new alerts notification system.
- Presented several "Tech-talks" regarding Qt, profiling, detecting memory leaks, and other technologies, attended by people in Burnaby, San Jose, and Hyderabad.
- Interviewed candidates for software development positions, and developed screening questions as part of the software developer hiring process.
- Helped plan and run holiday and social events as part of the social committee.
- Awarded a special stock award in recognition of excellent performance in 2009.

Test Automation Software Developer Sept'08–Dec'09
Polycom Canada, Unified Communications division, Burnaby, BC

- Increased automation test coverage by developing a framework for automating new classes of tests, such as those involving detailed testing of the UI, Polycom's web application API, and the embedded web server on the phones.
- Reduced the development time required to automate new tests by simplifying parts of the automation framework API, contributing to an approximate doubling of the rate at which new tests were automated.
- Optimized test execution by developing a distributed test queuing system and results database. The system manages finite shared resources like physical phones, registration lines, and test servers using a shared MySQL database,

and provides an Ajax-based web interface and RESTful API for queuing tests and viewing results, built with Apache and Perl's Catalyst Framework.

- Designed a suite of automated security tests cases that utilized Nmap, an open-source port scanner/network mapper.
- Worked with new coop students in test automation to help them get working

Robotic Vision Research Assistant
Simon Fraser University, Burnaby, BC

Feb'08–Aug'08

- Designed a cross-platform, object-oriented vision framework in C++ that enabled SFU engineering students to develop computer vision applications for processing real-time web-cam video.
- Developed control software for a Linux-based mobile PeopleBot™ research robot using C++, and several libraries: SONARNL™ (for sonar transducer processing), and OpenCV (for object recognition and tracking).
- Developed computer vision software, using C, C++ and OpenCV, for segmentation, object recognition and tracking, and stereo depth estimation.
- Researched novel approaches to problems in computer vision, such as object recognition, and presented my findings weekly in written reports.
- Empirically evaluated image segmentation algorithms using the Berkeley Segmentation Dataset and Benchmark
- Developed MEX-file extensions for MATLAB in C++ to perform image segmentation and other vision algorithms.

Co-op Test Automation Software Developer
Polycom Canada, Unified Communications division, Burnaby, BC

May'07–Jan'08

- Shortened regression test cycles by automating hundreds of previously manually-executed test cases, including VoIP signaling tests for protocols like SIP and RTP using Wireshark-based packet capture.
- Accelerated test automation development by designed and successfully promoting a comprehensive test automation framework in Perl that included modules for packet capture and analysis, automated phone provisioning and configuration, and navigation of the phone's user-interface.

Co-op Developer/QA Analyst
Top Producer Systems, Richmond, BC

May'05–Jan'06

- Initiated and lead the development of a Java/Swing-based test automation utility that tested hundreds of Top Connector™ modules for dozens of common mistakes. This involved parsing CSV, INI, and XML files that describe how Top Connector™ communicates with Multiple Listing Service (MLS) boards, and verifying that they are correctly formed and accurately describe the format of data actually provided for each MLS board.
- Executed manual test cases for Top Connector™, verifying that it was able to correctly search and display real-estate listings from hundreds of disparate Multiple Listing Service (MLS) boards throughout the US and Canada.

EDUCATION

BASc, Computer Engineering
Simon Fraser University, Burnaby, BC,
Graduated in 2008 with a CGPA of 3.75

PROFESSIONAL DEVELOPMENT	• Creating Mobile Apps with Qt - Nokia and ICS	2011
	• Foreign Corrupt Practices Act - Integrity Interactive	2009
	• IP and Competitive Intelligence - Integrity Interactive	2008

PROJECTS AND OPEN-SOURCE EXPERIENCE	<i>PowerLogger - a smartphone power meter</i>	May'11–Aug'11
	<ul style="list-style-type: none"> • Developed a graphical application for logging the power consumption of a smart phone, and an I2C to USB interface PCB that enabled the application to communicate with a battery gas gauge board attached to a smartphone. • Now being used by the GreenPhones research group at SFU's school of Computing Science to develop more accurate power consumption models for smart phones. 	

	<i>QSimpleTickerGraph - a custom ticker graph widget</i>	Aug'11–present
	<ul style="list-style-type: none"> • Developed a custom Qt widget that is similar to the widget used for "CPU Usage History" in the Windows Task Manager. 	

	<i>Cppcheck - a popular C++ static analysis tool</i>	Apr'10–present
	<ul style="list-style-type: none"> • Contributed over 45 new tests or fixes for existing tests, consisting of over 3100 lines of C++ code. Added a toolbar and filter field to the Qt-based user interface for filtering results. • Identified several bugs and submitted bug reports using the project's Trac issue management system. 	

	<i>CPAN Author</i>	Apr'08–present
	<ul style="list-style-type: none"> • Developed modules for reading and writing configuration files and contact directory files for Polycom's VoIP phones (e.g. Polycom-Config-File and Polycom-Contact-Directory). • Developed modules for very simple encryption and decryption (Crypt-Rot47) 	

AWARDS	• Polycom stock award for excellent performance	2009
	• Faculty of Applied Science Dean's Honour Roll	2005–2006
	• Science Council of BC Science Achievement Award	2002
	• The Governor General's Academic Medal	2002

CLEARANCES	<i>Enhanced Reliability Clearance</i>	2005
	Public Works and Government Services Canada	