

# Geoff JOHNSON

## PERSONAL DATA

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## WORK EXPERIENCE

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| <i>Current</i><br>2012 -<br>PRESENT | <b>IT Manager at COANDA, Burnaby BC</b><br><i>Mechanical Engineering Research and Development</i><br>As the manager of IT operations my responsibilities include planning the annual budget and ensuring that it is followed, managing a small staff who deal with support and administration, and reporting to operations and executive branches within the organization. I am also a key decision maker for purchases that relate to the computing infrastructure which includes devices for all office staff, a mobile workforce, users of a high performance cluster, and various cloud services.  |
| 2009 -<br>PRESENT                   | <b>Control System Software Developer at COANDA, Burnaby BC</b><br><i>Mechanical Engineering Research and Development</i><br>Became the sole developer of software used as the critical component in measurement and feedback control systems. During the transition I migrated an entire lab running proprietary software solutions on Microsoft Windows and National Instruments to an open source equivalent built on Linux and Comedi. More recently I have become responsible for managing the software component of all company projects and the tasks of a small team of developers.   |
| 2010 -<br>2012                      | <b>System and Network Administrator at COANDA, Burnaby BC</b><br><i>Mechanical Engineering Research and Development</i><br>During this time I was solely responsible for the design, implementation, and ongoing maintenance of a mixed Windows and Linux IT infrastructure for a head office and two satellite offices connected over VPN serving up to 60 permanent employees. The system services provided included Windows and Linux file servers, Windows and Linux application servers, and an ever growing high performance cluster (HPC) for a staff of 10 performing computational fluid dynamics (CFD) related tasks. On the network side I implemented a low latency network using Infiniband for the CFD HPC, a BSD based firewall, VPN services through OpenVPN, and basic networking using Dell PowerConnect managed switches. |
| 2007 -<br>2010                      | <b>Junior System and Network Administrator at COANDA, Burnaby BC</b><br><i>Mechanical Engineering Research and Development</i><br>Received direction from a committee of individuals tasked with maintaining a simple but growing IT infrastructure. This included supporting the staff needs of software, basic networking, PBX telephony, file and web services, and VPN services for remote staff.  |
| 2007 -<br>2009                      | <b>Junior Control System Software Developer at COANDA, Burnaby BC</b><br><i>Mechanical Engineering Research and Development</i><br>Modified and replicated simple software solutions in a team of 3 using National Instruments LabWindows/CVI software with C as the programming language. The majority of these systems were to monitor and measure industrial fluid dynamics experiments, but some included feedback control components that were coded using a PID algorithm.   |

## WORK EXPERIENCE CONTINUED

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- JUNE 2006 | **Junior Lab Technologist at COANDA, Burnaby BC**  
*Mechanical Engineering Research and Development*  
Worked as part of a team to carry out test plans to solve problems related to industrial fluid dynamics. Primarily this meant gathering data using a variety of methods including photography, recording and editing video, and capturing physical process measurements of weight, pressure, temperature using capable sensors.
- SEPT 2005 - JUNE 2006 | **Math and Physics Tutor at ACADEMY OF MATH AND SCIENCE, Burnaby BC**  
Ensured that as many as 4-5 students at a time were provided with course material which corresponded to school lessons. Students ranged in grades 2 through 12, and topics included kinematics, electricity and magnetism, trigonometry, probability and statistics.

## EDUCATION

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- 1999-2000 | **General studies**  
**North Island College, Campbell River BC**
- JUNE 2002 | **COMPUTER SYSTEMS TECHNOLOGY diploma graduate**  
**Camosun College, Victoria BC**  
**Project: ActiveX ModBus Control**  
Assisted in the development of an ActiveX control capable of providing a communications interface for Honeywell devices using the ModBus protocol. The software was developed using C++ and was capable of being used in programs written in any language that supports ActiveX controls and the RS232 serial interface.
- JUNE 2006 | **ROBOTICS AND AUTOMATION TECHNOLOGY diploma graduate**  
**British Columbia Institute of Technology, Burnaby BC**  
**Project: 2 Axis Polar Sand Plotter**  
Constructed a 2 axis plotting device based in a polar coordinate system for the purpose of drawing math equations in sand using a magnet and metal ball. All aspects of the project were designed and carried out by myself and one other student. 3D CAD software was used for designs that were machined using a CNC milling machine. User interface and control system software were written using the C and Assembly languages and run on an embedded computer with an ARM processor.
- FALL 2016 | **Student of the COMPUTER SYSTEMS TECHNOLOGY bachelor's degree**  
**British Columbia Institute of Technology, Burnaby BC**  
**Project: A Distributed Control System Implementation**  
Currently in the process of carrying out all of the stages of a software project including requirements analysis, a design which is largely done through UML, implementation using the C, Python and Vala languages, and testing which includes system evaluation and unit testing of the constituent libraries. This project takes an existing multi-threaded application responsible for measurement and control and separates the core components into Linux services that communicate over a ZeroMQ message bus, and provide RESTful services for extensibility into other systems and languages. The existing project can be seen at <https://github.com/coanda/dactl>, while the forked project being worked on is at <https://github.com/open-dcs/dcs>.

## COMPUTER SKILLS

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General Skills:	Working knowledge of several Linux distributions including Red Hat and Debian and multiple derivatives of each, Arch, Gentoo. MS Windows XP, 7, 8, 10, Server 2003, 2008 and 2012
Development Skills:	C, Vala, Ruby, Perl, bash, autotools, git, svn, cvs, JavaScript, HTML5, CSS, full stack web development using LAMP and MEAN, CMS sites with WordPress and Jekyll.
System Administration:	Puppet configuration management, virtualization using XenServer and VMware ESX, HPC management through Foreman and utilities like clustershell, infrastructure monitoring with Observium and Zenoss, Dell EqualLogic SAN hardware and software
Linux Administration:	Deploy and management of Ruby-on-Rails applications, file services using NFS, Samba and iSCSI, Apache, Nginx, WordPress CMS, cluster stack technologies including MPI and scheduling.
Network Administration:	InfiniBand, Dell PowerConnect managed switches, pfSense firewalls, iptables firewalls, Ubiquiti routers, switches and wireless devices.

## INTERESTS AND ACTIVITIES

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Open-Source Programming, Robotics, Microcontroller development  
Tennis, Squash