

Joel S. Williamson

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PROGRAMMING SKILLS

Extensive development experience in C++, Haskell, C, Python, OCaml
Familiar with JavaScript, LabVIEW, Assembly (MIPS and x86_64), Verilog, Bash, Tcl, Powershell, Boost
Development tools include Linux (Ubuntu, Red Hat, Centos, Arch), Git, Jenkins, GDB

WORK EXPERIENCE

Exinda Networks – C/C++ Software Developer

August 2015 - October 2016

Centos-based WAN Optimization firmware

- Integrated major Deep Packet Inspection software upgrade from external vendor
 - Implemented comprehensive test suite to ensure functionality was preserved
 - Rewrote core interface to take advantage of event-based architecture
- Created system to allow L7 classification engine to be upgraded independently of base system
 - Gave users access to new classifications without impacting system stability or uptime
- Led development of automatic deployment to virtual hosts
 - Used Python and VMOMI to create, provision, and convert to template ESXi virtual appliances
 - Used Microsoft Powershell to do the same with HyperV virtual appliances
- Improved build and continuous integration processes
- Fixed bugs in Tcl-based web frontend.

INDEPENDENT PROJECTS

MIPS Emulator – Developed a emulator to execute MIPS machine language platform independently – GitHub
Bootloader – Developed a x86 program to load and execute other programs in freestanding environment – GitHub
VCD Viewer – Created a JavaScript app to render waveform output of circuit simulators – Chrome Web Store
Web Server – Wrote a web server in C, ported it to C++11 using RAII and generic programming – GitHub
Game of Life – Created an engine for Life-like cellular automata on an unbound grid. – GitHub
Bimap – Contributor and maintainer of the bimap two-directional lookup package for Haskell Hackage
Project Euler – Computational math problems, Top 80 in Canada

EDUCATION

University of Waterloo
Computational Science, Specialization in Physics

September 2009 – December 2014

COMMUNITY INVOLVEMENT

Rangemaster – Archery Club, University of Waterloo

2012 – present

- Regularly trained new members in archery essentials and safety procedures
- Designed curriculum to improve beginner progression

INTERESTS

Skiing (CSIA Certified Instructor), Archery, Reading, Biking, Gymnastic Rings, Cooking