KAMBIZ FROUNCHI

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SUMMARY

Full Stack Web Developer with experience with the MERN stack as well as working as a principal software engineer and team lead in the embedded and networking domains.

TECHNICAL SKILLS

- Languages: C, Javascript, Java
- Web: Express, React, Node.js, Bootstrap, CSS, HTML5, MySQL, MongoDB
- Networking: Ethernet, IP and MPLS dataplanes, Broadcom DNX architecture
- Operating Systems and platforms: Linux, QNX, ARM-based multi-core embedded SOCs
- Machine learning modelling

EXPERIENCE

Software Engineer 4, Packet Networking Data plane   July 2016 - Present
Ciena   Ottawa, ON
- Contribute as a principal engineer in core architecture, design and planning (agile) aspects
- Provide technical leadership to other engineers and help grow the team
- Work on the design and implementation of new Distributed Disaggregated Chassis products
- Design software on a docker based micro-service architecture using asynchronous paradigms including publisher/subscriber and asynchronous database (Redis) callbacks
- Contribute significantly on every aspect of the overall solution for major features including the object model, resource management, high availability, software upgrade and optimization aspects
- Re-factor software towards maintainability and robustness, resolving critical race conditions
- Designed and implemented all dataplane aspects of EVPN/L2VPN features leading two other senior engineers
- Designed and Implemented data-plane aspects of IP over MPLS and Multi-chassis Link Aggregation
- Involved on a patent (now filed) that uses protection schemes for fast convergence of ECMP path failures

Software Engineer 3, Packet Networking Data plane   May 2014 - June 2016
Ciena   Ottawa, ON

- Analyzed and removed performance bottlenecks to improve the protection switching performance of G8032 rings by a factor of ten
- Served as the principal designer in the implementation of Hierarchical Egress Quality of Service, enhancing the shaping and scheduling model from a per port, per CoS model to a per port, per service, per CoS model

Team Lead, OS and Device Firmware   January 2013 - April 2014

BlackBerry   Ottawa, ON

- Led a team of a few developers in ARM-based device driver and platform software development for the BB10 OS, managing deliverables and deadlines
- Developed system reset infrastructure including graceful device reset and shutdown, critical process crash recovery, software/hardware hang recovery, reset diagnosis and debug infrastructure
- Developed QNX drivers for hwio, interrupts, sdio, spi and i2c, focusing on performance and power

Embedded Software Designer, OS and Device Firmware   2007 - 2012
BlackBerry   Ottawa, ON

- Implemented a QNX-based gpio interrupt controller driver for Qualcomm chipsets in ARM assembly
- Worked as one of the primary designers in a small team to replace the L4 Kernel running on the Qualcomm apps core with the BlackBerry in-house Kernel
- Implemented platform independent OS primitive API on top of BlackBerry in-house OS in areas such as synchronization, thread IPC, interrupts and timers
- Developed the memory map for all Qualcomm based BB7 devices
- Optimized the BlackBerry boot loader speed performance by more than 6 times, finding the bottlenecks and using proper hardware blocks
- Implemented drivers to use the DMA and crypto block as part of boot loader optimization work
- Brought up the BlackBerry Java Virtual Machine on BB7 devices which was a key milestone for OS readiness for the application layer teams
- Debugged critical issues using different tools such as JTAG ICE debugger, usb/serial logs and gdb

EDUCATION

Bootcamp Certificate: Carleton University, Ottawa, ON   2020

- A 24-week intensive program focused on gaining technical programming skills in HTML5, CSS3, Javascript, JQuery, Bootstrap, Node.js, MySQL, MongoDB, Express, Handelbars.js & ReactJS.

Master of Applied Science in Software Eng., Carleton University, Ottawa, ON   2007-2009

- Conducted research in machine learning, image processing, verification and validation, using Weka and MATLAB

Bachelor of Computer Systems Eng., Carleton University, Ottawa, ON   2001-2006