KAMBIZ FROUNCHI

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OBJECTIVE

To explore new challenges as a software engineer in web based software involving big data

INDUSTRY EXPERIENCE

Software Engineer 4, Packet Networking Data plane, Ciena, Ottawa, ON July 2016 – Present

- Implement data plane software for next generation chassis and pizza box Ethernet switches
- 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
- Design software on a docker based micro service based architecture using asynchronous paradigms including publisher/subscriber and asynchronous database callbacks
- Re-factor software towards maintainability and robustness, resolving critical race conditions
- Serve as the lead developer for the EVPN and L2VPN dataplane modules, which operates under a dual personality: asynchronous model for provisioning while using a local cache for dynamic events
- Serve as an advisory role with respect to new feature and product feasibility, timelines and estimate of required work items and resources
- Involved in interviewing candidates and building the team
- Designed and Implemented data-plane aspects of IP over MPLS, Multi-chassis Link Aggregation and MPLS Call Admission Control

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

- 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, BlackBerry, Ottawa, ON Jan. 2013 – Apr. 2014

- 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, Blackberry, Ottawa, ON 2007 – 2012

- Designed and implemented a custom shutdown solution due to hardware limitations
- Designed and implemented a framework for effective reset classification and debug on BB10
- Designed and implemented a feature to collect logs and recover from critical process crashes on BB10
- 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
- Contributed substantially to the training of the larger OS team
- 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

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- Debugged and fixed critical DDR chip/DDR controller issues, collaborating closely with Qualcomm and BlackBerry hardware teams
- Brought up the BlackBerry Java Virtual Machine on BB7 devices which was a key milestone for OS readiness for the application layer teams
- Brought up IPC between the modem and apps core running different OSs for BB7
- Debugged critical issues using different tools such as JTAG ICE debugger, usb/serial logs and gdb

Software Designer, BlackBerry Software Systems, Ottawa, ON 2006 – 2007

- Conducted research to enhance the end-to-end performance of BlackBerry transport protocols
- Modeled BlackBerry protocols and device behavior via finite state machines in the OPNET simulation environment
- Set up a research lab compromised of core BlackBerry infrastructure components, working with database technologies (Oracle, SQL) and inter-operating the components

Software Designer, BlackBerry Architecture, Ottawa, ON 2004 – 2005

- Designed an object-oriented discrete event simulation framework for traffic simulation of BlackBerry transport protocols (C++, Java)
- Used the Java Native Interface for interfacing a Java and C++ application on Symbian platforms

EDUCATION

6 Month intensive bootcamp in Web Development, Carleton University, Ottawa, ON May 2020 - Present

- Practical experience in HTML5, CSS, Bootstrap, JavaScript, React, Node.js, MySQL and MongoDB

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

- **Thesis:** Learning a test oracle towards automating image segmentation evaluation
- Collaborated with Siemens Corporate Research and Simula Research Laboratory for thesis research
- Conducted research in **machine learning**, image processing, verification and validation, using Weka and MATLAB

Bachelor of Computer Systems Eng., High distinction, co-op, Carleton University, Ottawa, ON 2001 – 2006

- **Final project:** Performance analysis of a QoS-aware web service replica selection framework for an extranet (joint research between Carleton University and Alcatel-Lucent)
- Conducted research and gained exposure to Service Oriented Architecture (SOA), redundancy, web services, SOAP and load balancing

PUBLICATIONS

- First author of Elsevier Information and Software Technology journal paper that describes Master's thesis findings, Volume 53, Issue 12, Pages 1337-1348
- First author and presenter of IEEE conference paper on Bachelor's final project findings in CCECE 2006, Pages 1380-1384

ACADEMIC ACHIEVEMENTS

- Ontario Graduate Studies (OGS) scholarship, NSERC award for qualities of research and innovation in undergraduate final project, NSERC research grant for research on QoS routing using traffic forecast
- Outstanding academic achievement award for high academic performance (undergraduate)
- Teaching assistant for different courses such as model driven development, C++, Assembly, Advanced Math.

EXTRACURRICULAR ACTIVITIES

- Playing the classical guitar, skiing, learning to skate, learning new technologies