SHIRISH . BASKARAN @ gmail.com | +1 (226) 808-5497

Software development professional with a strong technical foundation, diverse interests and a proven track record of delivery; seeking an individual contributor opportunity in new and challenging problem domains

RELEVANT SKILLS

- Embedded systems; driver development; middleware; RTOS; Wi-Fi; networking; API design
- Agile methodologies; continuous integration; unit, functional testing; technical & team leadership
- Proficient: **{** C **}** Competent: **{** Python, Makefiles **}** Novice: **{** C++, Shell scripting, ARM Assembly **}**
- Protocols: IEEE 802.11, TCP/IP, UDP, DHCP, DNS, ARP; Bus: SDIO, SPI

WORK EXPERIENCE

Team Lead, BlackBerry OS / Wireless Groups
February 2012 - January 2014

Led a team of 4 developers assigned to time sensitive projects in need of technical expertise and leadership

- Responsible for issue triage and codeline integration in addition to being a productive developer on teams
- Exposed to agile methodologies; adopted principles from Scrum & Kanban suited to team and projects
- Emphasized software quality; established clear coding guidelines; thorough design and code reviews and use of wikis, continuous integration (Jenkins), static code analysis (Klocwork), unit and functional testing tools (Check, Robot Framework)

Project: Integration of a new Wi-Fi chipset family on BlackBerry10

- Led project team of 6 developers spread across multiple development sites
- Managed relationship with a large chipset vendor and worked together to implement and support:
  - Hardware bring-up and porting to QNX/BlackBerry 10 OS
  - RF hardware calibration and validation at the factory
  - Station mode, Mobile Hotspot and Wi-Fi Direct/P2P functionality including Wi-Fi Display
  - Product Wi-Fi Alliance certification
- Implemented functionality between the BlackBerry proprietary WLAN Manager, customized version of the open source WPA supplicant and a network driver within the QNX io-pkt stack (based on NetBSD)
- Defined and executed processes to review, integrate and validate code releases from vendor
- Led investigation and resolution of complex system level issues ranging from subsystem interaction during startup to poor battery life performance

Key Accomplishments:

- Achieved fastest productization of a new Wi-Fi chipset on a BlackBerry phone, with KPIs (throughput, power, driver stability) meeting or exceeding mature solutions
- Championed and established processes for effective joint development with vendor

Project: Design of telephony middleware for BlackBerry10

- Led a project team of 9 developers, a majority needed on-boarding to QNX and C development
- Designed and built a critical system service from the ground up which provided:
  - A framework to support call control, call history and settings for multiple phone “lines”
  - Utilities for phone number manipulation (formatting, “smart” dialling & canonical representation)
  - A cellular phone “line” (for both GSM & CDMA technologies) as per requirements from carriers
  - High availability and reliability for emergency call scenarios
- Implemented modules for a QNX Persistent Publish/Subscribe based JSON API parser/dispatcher; state machines for the phone/call and audio subsystems and other core framework components responsible for threading, event management and logging

Key Accomplishments:

- Achieved design goals of building a reliable service capable of recovery from a process crash mid-call; passed architecture review board and security research group audits with no resulting change requests
- Mentored and built an effective agile team whose “definition of done” set a high quality bar

Software Developer, QNX Platform Team
February 2011 - February 2012

Member of a rapid prototyping team on the leading edge of BlackBerry's transition to the QNX OS

- Messaging, SMTP functionality on Personal Information Manager (PIM) prototype on PlayBook
- Networking functionality on a BlackBerry JVM on PlayBook email over Wi-Fi demo
- Basic Facebook functionality (get friend list, post to wall) for a native application demo
- Driver for a tunable capacitance controller (STHVDAC-303) for a hardware team prototype

Software Developer, WLAN Radio & IP Transport
June 2008 - February 2011

WLAN Protocols & Firmware Developer, Intern
May 2006 - September 2007

Member of a team that worked on the first dual-radio Wi-Fi capable BlackBerry devices

- Maintained the core Wi-Fi stack and ported multiple vendor network drivers to the BlackBerry RTOS
- Implemented standard and proprietary IEEE 802.11 features covering power management, quality of service, call admission control, regulatory domain, rate adaptation, connection and scan management
- Experienced in IEEE 802.11 and TCP/IP protocol analysis through numerous investigations of connectivity and Wi-Fi interoperability issues reported by customers and field testers
- Implemented a DNS stub resolver for the BlackBerry IPv4 stack; also maintained DHCP, ARP clients
- Devoted significant time and effort to maximising battery life performance; BlackBerry's "always on" Wi-Fi use cases required aggressive power saving techniques with complex trade offs
- Profiled and improved TCP and UDP throughput performance on multiple hardware platforms
- Eliminated all instances where the Wi-Fi stack starved JVM UI threads beyond 60 fps budget
- Developed a popular tool to perform "shelving" on Perforce clients (before it was added in version 2009.2)
- Recognized by team for taking initiative to improve code quality and eliminate technical debt
- Mentored new employees and delivered Wi-Fi training to remote product development sites
- Involved in Wi-Fi chipset evaluation and selection for future products

Key Accomplishments:

- Led efforts to port the core Wi-Fi and VPN stacks to the Qualcomm REX OS to support CDMA device variants; the resulting code reuse was considered a big win for the department as highlighted by the VP
- Led Wi-Fi development on several BlackBerry phones (Storm2, Tour2, Curve 8530, Style), from hardware bring-up of chipsets to supporting Wi-Fi Alliance certification programs

EDUCATION

B.Eng Honours Electrical Engineering – Internship Program, 2002-2008
McGill University, Montreal, Canada
CGPA 3.44/4.0

Electives

- Microprocessor Systems, Computer Architecture, Operating Systems, Artificial Intelligence, Signal Processing Hardware, Computer Graphics, Telecom Network Architecture

Selected Projects

- Honours Thesis: Hardware acceleration of Particle Systems using Cell Broadband Engine (2007-2008)
- Microprocessor Systems: Project included wiring and writing drivers for peripheral devices including a character LCD, touch screen pixel LCD, Real Time Clock, and an 802.11b chip on a TI MSP430 microprocessor based development board with an Altera Max-II CPLD (2005)

HOBBIES & INTERESTS

- Self development and continuous learning; taken MOOCs ranging from Data Analysis to Economic Policymaking
- Fan of fantasy and science fiction books; webcomics; film, music festivals and British TV shows
- Travel and adventure; took a year off to travel and seek out thrilling and rejuvenating experiences around the world, from snorkelling around remote islands in Palawan, Philippines to hurtling down sand dunes in Swakopmund, Namibia