SOFTWARE ENGINEER

Summary

- Senior Software Engineer with 13+ years in analysis, design, development, testing and implementation of mobile embedded systems
- Expert problem solver who quickly grasps complex situations and develops timely solutions
- Demonstrated, outstanding customer facing skills. Effective mediator between programmers, end users, and clients

Skills

Languages

- C, C++, Visual Basic, Assembly

Operating Systems / Platforms

- Windows Phone, REX OS, MicroC/OS-II, BREW, VxWorks, Windows

Development Tools

- MS Visual Studio, GNU, Lauterbach TRACE, Wireshark, Visio, MS Project, Qualcomm QXDM/QPST/QDART/Snapper

Wireless and Network Protocols

- LTE, CDMA, 1xEVDO, eHRPD, GSM, WCDMA, UMTS, GPS, IS-801, SUPL, VoLTE, IMS, SIP, OMA-DM, TCP/IP, HTTP

Communication Protocols

- USB, RS-232, I2C, SDIO, Modbus, CAN Bus

Instrumentation

- JTAG Debugger, Anritsu & Agilent Signaling Testers, Oscilloscopes, Logic Analyzers, Signal Generators, Multi-Meters, USB Protocol Analyzers

Experience

Software Engineer
January 2012 to Current Mastech Digital, Inc. ï¼ Birmingham , AL

- Develop, integrate, and troubleshoot modem protocol software for Windows Phone devices. Radio technologies include CDMA, 1xEVDO, eHRPD, LTE, GSM, WCDMA, UMTS, and GPS
- Manage IMS/VoLTE configuration and compliance for North American mobile operators. Brought up the first VoLTE call on a Nokia Lumia device
- Debug conformance test failures (PTCRB, GCF, and network vendor IOT)
- Develop and debug Radio Interface Layer (RIL) features such as cellular device management, network configuration and status reporting, SIM card toolkit, voice call processing, and text messaging
- Debug protocol issues using signaling testers and Qualcomm diagnostic tools

Senior Software Engineer
August 2004 to January 2012 General Motors ï¼ Roanoke , IN

- Led design, development, and testing of real-time embedded software for wireless M2M tracking devices. Responsible for all system components from boot loader to customer specific applications. Development done in C, C++ and ARM Assembler
- Designed and developed multiple board support packages (BSP) including boot loaders, I/O interfaces, NAND and NOR Flash memory drivers, RF drivers, and power management
- Developed advanced power savings algorithms based on input from various sensors including MEMs accelerometers, ambient light, capacitive touch, temperature, and vibration detection modules
- Designed and developed OMA-DM client to remotely provision, configure and retrieve device information over the air
- Developed BREW APIs to enable 3rd party custom applications
- Developed embedded application to manage over-the-air downloads of 3rd party applications
- Developed performance analysis, flash programming, and product support tools using Visual Basic and C++
- Successfully managed numerous devices through commercial certification on several mobile operators including Verizon, Sprint, TELUS, Bell, Iusacell, and VIVO. Involved protocol stack customization to meet the mobile operator's requirements, executing carrier test plans before submission, and supporting the operator's test labs during certification
- Led firmware development of a cooperative project to develop a global mode M2M module (UMTS/HSPA+, GSM/GPRS/EDGE, and 1xRTT/EVDO)

Level 3 Technical Support Engineer
February 2004 to August 2004 Lakeshirts, Inc ï¼ Loveland , CO

- Analyzed and developed solutions for escalated issues with wireless AVL systems (GSM/GPRS & Satellite based). Reproduced problems in the lab, identified design related issues, and developed patches
- Supported Location Service Providers with system integration
- Wrote comprehensive software test plans for GPS tracking systems
- Integrated Bluetooth chipset to existing product to allow for wireless serial connectivity

Software Developer
August 2003 to February 2004 Cisco Systems, Inc. ï¼ Philadelphia , PA

- Designed, developed, and debugged real-time embedded software for an industrial CDMA 1xRTT wireless modem
- Integrated a TCP/IP stack into the product to support remote GPS reporting
- Implemented GPS handling routines, UDP and IP routing, and Modbus/TCP
- Developed a PC based application to download firmware into the modem's flash using Visual C++
- Developed and executed software test cases based on industry standards

Senior Firmware Developer
September 2000 to April 2003 Sierra Wireless ï¼ City , STATE

- Developed real-time embedded software for a CDMA2000 1XEV-DO + 1xRTT wireless modem based on Qualcomm's MSM5500 chipset
- Programmed in C for ARM7 microprocessor based architecture. Modified Windows drivers using Visual C++. Low-level debugging using Lauterbach Trace 32 ICD and JTAG debugger
- Developed radio drivers and enhanced PCMCIA interface to support higher throughput rates
- Developed and executed infrastructure interoperability test cases and functional test plans
- Interacted directly with hardware. Debugged issues relating to hardware and firmware interaction using hardware diagnostic tools such as logic analyzers and oscilloscopes
- Participated in weekly project meetings with the customers. Handled change requests, prioritized issues, and coordinated troubleshooting efforts
- Provided on-site and remote technical support for mobile operator's 1xEV-DO field trial

Education
Bachelor of Technology : Computer Systems , 2011 British Columbia Institute of Technology ï¼ City , State , Canada

Graduated with distinction

Diploma : Electronics Engineering , 2000 Camosun College ï¼ City , State , Canada