Jerry Zheng

Embedded Software Engineer - Magna Vectrics

Mississauga, ON - Email me on Indeed: indeed.com/r/Jerry-Zheng/b69176f29b9c1899

• Over ten years of success in requirement analysis, designing, developing and validation real time system and implement firmware in C/C++/C# and assembly language following the DO-178b standard.
• Hand on experience with safety critical software developing with all steps of software development life cycle (SDLC).
• Experience with video/graphic and network protocol, such as TCP/IP, CAN, 1394b, SPI, USB.
• Experience with development tools, such as logic analyzers, signal generators and oscilloscopes.
• Consistently met and exceeded goals while working individually or in a team environment.
• Work well in a team environment.
• Honest, dependable and hard working.

Professional Skill

• Programming real time software in RTOS (On Time, Linux, Vxworks) and windows (NT, 2000, XP) platform.
• Programming communication protocols (TCP/IP, IEEE1394, AFDX, Arinc429, CAN, RS232/485, USB)
• Program in C/C++ (MFC, STL)/C# (.Net platform) and assembler (8x51, ARM, MIPS, m68x, PIC, PowerPC, x86).
• Use DOORS to manage the design requirements (SRD, SDD, STR, STD and VDD).
• Program in LabVIEW and Windows/CVI. • Diagnostic application for ASIC/FPGA
• Network protocols in embedded system • Designing embedded system hardware
• Linux/Unix, DOS, Windows95/98/2000/NT • Organizational and problem-solving skills
• Work well in a team environment • Honest, dependable and hard working

WORK EXPERIENCE

Embedded Software Engineer

Magna Vectrics - 2011 to Present

Developed Vehicle Panorama Vision System

Analyzed and managed the systems level requirements for vehicle panorama vision system. Work with system software developing and validation.

• Designed and implemented CAN, TCP/IP, SSI communication device driver and image processing under customized OS kernel for embedded panorama vision system in C.
• Setup system test environment. Designed and implemented test software in C++/C#, LabVIEW and MATLAB.
• Designed and implemented software requirements of unit test and system integration test for vehicle panorama vision system.
• Debug embedded real-time software by JTAG/logic analyzers

Senior Software Developer

COM DEV Ltd - 2010 to 2011

Developed Satellite Test and Simulation System

Analyzed and managed the systems level requirements for satellite test and Simulation system. Work with test solutions group on software developing and validation.

• Designed and implemented software requirements and system integration test for M3M and RCM satellite. Developed satellites communicate simulation system.
• Designed and implemented CAN, TCP/IP, SSI communication protocol in C under customized OS kernel.
• Designed and implemented system level test script (C#, LabVIEW) for M3M and RCM satellite.

• Debug embedded real-time software by JTAG/logic analyzers

Software Engineer

Tricom Technologies Inc, Mississauga, Canada - 2008 to 2010

Developed Flight Rehosting Maintenance Simulation System
Analyzed and managed the systems level requirements for A380 rehosting Maintenance Training Device System (MTD). Work with hardware team on firmware validation.
• Designed and implemented software requirements of simulation Build-in Test Equipment (BITE) system for A380 rehosting MTD.
• Designed and implemented SCI, Arinc429 and AFDX simulate communication protocol in C/C++.
• Designed and validation USB BSP, HID protocol, firmware and diagnostic tools for A380 simulation system in C/C++/C#.

Software Designer

Honeywell, Mississauga, Canada - 2004 to 2008

Developed embedded software, test system and emulation system for airplane subsystem
Developed software requirements and designed specification. Worked with A380, JSF, MD90, X47 projects, designed and implemented real time software to emulate, test and monitor aero plane ECS controller and power support system follow the DO-178b standard.
• Designed and implemented AFDX, CAN, SPI, I2C communication firmware on A380 gateway under customized Linux for Secondary Electrical Power Distribution System (SEPDC).
• Designed and implemented embedded control software for SEPDC.
• Designed and implemented Gateway software system to emulate, verify and monitor ECS controller via TCP/IP and RS485 communication protocol under customized Linux in X47 project.
• Designed, implemented and validation 1394b communication protocols and control process for JSF system redundancy functions test.
• Designed and implemented embedded test software for PowerPC and DSP in A380 gateway for SEPDC C/C++.
• Designed and implemented system level test script suit for A380 SPEDC system redundancy functions test.
• Designed and implemented BITE monitor software by using LabVIEW and LabWindows/CVI for APU/GCU via ARINC 429 communication protocol in MD90 project.
• Debug embedded real-time software by JTAG/BDM.

Firmware Engineer

ATI TECHNOLOGIES INC - 2000 to 2004

Developed firmware, diagnostic tool and multi-media application for HDTV Set-Top Box
Developed software/firmware requirements and designed specification. Work with HDTV project, designed, implemented and validation STB firmware, ISRs and drivers for HDTV ASIC.
• Designed and implemented firmware for evaluation HDTV STB.
• Designed and implemented Video/Graphics, 1394a, TCP/IP, USB device drivers on PCI bus.
• Designed and implemented firmware, interrupt service routines, firmware API and initialization functions for BSP in C and assembly under VxWorks and Linux.
• Designed and implemented diagnostic applications for individual function block in C for HDTV SOC ASIC.
• Authored validation diagnostic tools for STB system performance in C/C++.
• Designed and debugged the mips32 32bits RISC microprocessor in the SOC ASIC using JTAG.

Software Analyst

Beijing LXHE Technology Development Corporation - ### - 1994 to 2000

Developed Detection and Communication Embedded System software

Analyzed and managed the systems level requirements for embedded system. Worked with system software designed, implemented and validation.
• Designed and implemented embedded system software/firmware.
• Implemented the system real-time control firmware, firmware API, low-level device drivers and interrupt service routines in C and assembly language for Linux and Vxworks.
• Designed and implemented diagnostic applications in C/C++ to for software individual functional block testing.
• Designed and implemented diagnostic applications in C/C++ for FPGA individual functional block testing.
• Authored validation diagnostic applications for system real-time performance.

Hardware/Firmware Engineer

Power New Technology Research Institute, Tsinghua University - ### - 1990 to 1994

Designed an embedded pre-paid electricity management system.
Developed hardware/software requirements and designed specification for embedded system.
• Developed the microcontroller (8051, PIC16) interface and digital circuit of the system.
• Designed and implemented firmware of the intelligent electrical meter and its interface.
• Designed and validation firmware for the pre-paid electrical meter program.
• Utilized Microsoft C/C++ to create the PC application.
Developed an intelligent measuring and detecting real-time control software
Developed hardware/software requirements and designed specification measuring system.
• Designed defect embedded system consisting of high-speed A/D and DSP as the collection system, as well as microcontroller(x86) front control and microcomputer control center.
• Designed and debug the circuits in measuring the system.
• Authored validation diagnostic tools for system software performance.
Created characteristics measuring embedded system firmware for a high voltage switch
Developed hardware requirements and designed specification for measuring system.
• Designed high-speed A/D devices in real-time measuring system which consisted of microprocessor (m68k) as the controller and STD bus as the connecting structure.
• Designed special circuit for the moving sensors, circuit for electric-photo and photoelectric transformation.
• Designed, debugged and measured the photoelectric sensor and related circuit for measuring the action of vacuum switches.
• Implemented real-time control and measuring firmware in assembly for the system.
• Authored validation diagnostic tools for system hardware performance.

EDUCATION

Master of Engineering in Electrical Engineering

Tsinghua University - ###