Michael Russo
Embedded Systems Engineer

Philadelphia, PA - Email me on Indeed: indeed.com/r/Michael-Russo/2f244047242658ec

Embedded Systems/Software/MCSE/CCNA

Experience (over 10 years) working in LAN/WAN & embedded systems for military, federal government and commercial domains. The past four years I have researched and developed embedded systems for commercial and military products. Produced documentation to sufficiently identify product requirements, feasibility and testing. Engineered embedded firmware meeting design reliability, functional and quality requirements. Assembled with senior engineers and team members to analyze data and characterize critical elements, determining product operation and modifications. I also designed, implemented, and maintained classified and unclassified LAN/WAN networks while in the Marine Corps, as a Marine, and at the Pentagon, as a contractor, supporting the efforts after September 11th, 2001.

• Embedded System software design
• Firmware development in C and assembly language with multiple MCU families and toolchains
• IEC 62304 PEMS software life cycle process and document creation
• Marine Corps Sergeant
• Secured top secret clearance
• Bachelors of Science Computer Engineering
• MCSE NT […] & CCNA
Authorized to work in the US for any employer

WORK EXPERIENCE

Electrical Engineer II
Dorman Products   -   Colmar, PA - September 2015 to March 2016

• Led product development meetings conceiving automotive product that programs vehicle modules with information downloaded from the internet. Consulted with field application engineers (FAE) and contractors
• Researched contractors product, identified capabilities that can be implemented into our product operation. Consulted with contractors confirming capabilities that match our product operation and resolutions to limitations
• Developed embedded firmware with recommended STM32 development tools, testing capabilities of firmware drivers and simulated operation of product
• Reverse engineered automotive manufacturer programming processes then develop "C" applications that generate identical programming process for vehicle modules and key fobs
• Engineered software architecture via logged automotive manufacturer HS-CAN and SW-CAN data

Firmware/Software Engineer
Action Manufacturing Company   -   Bristol, PA - September 2014 to September 2015

• Developed MSP430 assembly code for Hydra 70 Rocket system. Analyzed existing embedded firmware to verify software requirements were met, modifying software as required
• Defined test procedures reflecting product requirements. Executed tests, then calculated production capability of results. Test results were interpreted, pinpointing instabilities and game planned how product and production requirements will be met

• Defined software requirements and product operation of production machine, met regularly with senior engineer to verify stakeholder requirements are met and documents are clearly understood
• Developed Java application for production machine that commanded embedded system operations, stored results, indicated to operator test status, production results and production calculations
• Led meetings with contractor to review requirements, develop production machine embedded software and Modbus communication, then tested developed software met requirements

Embedded Systems Software Engineer
Globus Medical   -   Audubon, PA   -   May 2013 to March 2014

Product Development/Research
• Developed embedded firmware and Bluetooth Low Energy (BLE) custom profile for open loop spinal cord stimulator medical product
• Researched BLE protocol, confirming with Bluetooth Special Interest Group (SIG) capabilities that meet product requirements and resolutions to its limitations. Consulted with Bluetooth SIG and qualified testing facilities the authorized usage of BLE intellectual property, qualification and compliance testing
• Defined embedded software requirements, software architecture, and failure mode effects analysis
• Led meetings to review complex system design, progress, issues, IEC 62304 PEMS software life cycle and requirements documents, improving overall understanding of system functionality
• Verified BLE and SPI data communication & timing using oscilloscope/logic analyzer, characterizing outputs of the digital hardware
• Presented current state of the product's development to the entire department, representing the group in a professional manner and fielding all related questions
• Defined timeline of tasks, recorded completion and current progress relative to product goals, identifying task dependencies and priority

Software Engineer
Teletronics Technology Corp   -   Newtown, PA   -   January 2013 to May 2013

• Developed Wireshark dissector plugins within embedded Linux environment to interpret proprietary Data Acquisition System (DAS) communication protocol, verifying protocol operation
• Executed tests demonstrating usability of dissector plugins, met with peers about usage of dissectors to improve API functionality and layout while they test/verify communication protocol
• Familiar with embedded Linux kernel & file system configuration and deployment via virtual machine
• Developed, within embedded Linux environment, SSD drive partitioning utility used in DAS product to store logged information

Independent Research Student
Drexel University   -   Philadelphia, PA   -   April 2012 to December 2012

• Defined requirements of independent study contracts with professor, lead meetings explaining progress, constraints and requirements met
• Researched AIRAT2 micro-mouse robot hardware and software functionalities
• Documented the detailed operation of all hardware, software, their relationship to the robot's operations and intended operation of AIRAT2 micro-mouse robot
• Defined software requirements to maneuver robot through a maze
• Developed 'C' application maneuvering micro-mouse robot, demonstrating use of interrupts, timers, registers, ROM, RAM, and ADC
• Defined procedures for follow-on students to create IAR Workbench project, program AIRAT2 micro-mouse robot and the uses of required additional reference documentation

Embedded Engineer Internship
OTW Technology   -   Warminster, PA   -   November 2011 to September 2012

• Verified MSP430 assembly language source code used in over 10000 production military PCBs, reworking program flow, Interrupt Service Routines(ISR) and low power operations to meet software requirements
• Verified B.O.M components for production and prototype PCBs before being sent to manufacturer, then validated delivered prototype PCB's match SPICE model
• Researched technologies to improve project/lab communication and project design, examined alternatives of design with current market hardware, identifying where it is immediately effective
• Defined environmental test procedures that reflects product requirements. Executed tests, recorded results characterizing digital outputs of Microchip MCU
• Researched OS X Lion server for small office. Identified capabilities that met office requirements
• Implemented OS X Lion client/server test environment demonstrating capabilities that positively impact office workflow and communication

Drexel University CO-OP
Keystone Foods - West Conshohocken, PA - September 2009 to March 2010

• Developed DOS scripts automating Symantec Ghost clone and capture of laptop configurations through the network and bootable USB
• Documented details of software architecture so team can alter scripts as needed. Cloned laptop configurations were outlined incorporating resolutions to repetitive problems
• Defined user workplace requirements, selected laptops, replacement hardware, and specific peripherals
• Strengthened Zimbra mail filter through regular expressions, blocking SPAM targeting end-users

Systems Administrator
Senet International - March 2004 to December 2004

(Occupational Safety & Health Administration [OSHA] Network Operations Center)

• Administrator of 150 site Windows Enterprise Network based in Washington D.C. with over 5,000 Windows XP client and 150 server systems throughout Continental U.S. and U.S. territories
• Designed Enterprise Active Directory 2003 upgrade with team after analyzing existing Windows NT 4.0 architecture. Defined Windows 2003 server and backup strategy requirements. Interpreted requirements to specify suitable software tools for National Office system administrators and remote sites
• Engineered deployment of system upgrade implemented suitable resolutions to detectable future concerns. Documented process for rapid deployment and site integration
• Resolved National Office and subordinate site backup strategy related issues through communication with site administrators and use of remote administrative tools

Systems Administrator
Computer Sciences Corporation - October 2001 to March 2004

(Navy Annex, Pentagon, Quantico, Site-R)

• Secured top secret clearance
• Executed expansion of classified system after events of September 11, 2001 including expansion of Windows NT 4.0 architecture, Cisco switch/router network, and Exchange 5.5. Engineered backup/disaster recovery strategy using Veritas BackupExec for local site and remote sites to Scalar tape library and network-attached storage devices. Configured Cisco switches, implementing VLANs
• Defined requirements for Windows NT 4.0 system policies and client/server security. Implemented client/server security configuration and automated NT 4.0/2000 server/client cloning process
• Resolved system issues at Pentagon and remote sites, analyzing issue to detect future concerns
• Cooperated regularly with commanding generals at Pentagon and remote sites to resolve related issues and define/implement user requirements

Network Operations Manager (Sergeant)

United States Marine Corps - Washington, DC - April 2000 to September 2001

Washington, DC)
Network Operations Manager (Sergeant)
• Defined methodologies of the network operations center and Marine Barracks LAN, including procedures for software installation, selection and routine operations. Designed and implemented training program for experienced users to assist in reporting and troubleshooting end user problems
• Led team through project completion and resolution of system issues
• Led meetings with different departments to pinpoint system-related conflicts
• Promoted selected Marine Barracks' activities; gave tours to visiting dignitaries, created pleasant environment for visitors
• Improved user telephone service by adjusting call accounting system, audix system, basic call management system and configurations of Definity switch based on analysis of collected user concerns

Deployed Network Administrator (Corporal)

3rd Marine Division Headquarters Battalion Communication Company - May 1998 to April 2000

• Secured secret clearance
• Completed Corporal's leadership course, developed motivational techniques, communication and management skills for use within a small unit
• Led inspections verifying readiness of junior Marines for upcoming operations and their general order. Led junior Marines in fitness training and formation movements building confidence in the unit and instilling habits of precision
• Defined procedures to implement Windows NT 4.0 servers, Exchange 5.5, X.400, DNS, CAT-5 cable, and Cisco routers. These were later used for training junior Marines
• Executed training operations in remote areas of the general Pacific, implemented classified and unclassified computer networks used for war-time simulation
• Planned and executed Cisco router infrastructures given a Class C IP network for multiple classified and unclassified deployed computer systems

EDUCATION

Bachelor of Science in Computer Engineering

Drexel University - Philadelphia, PA
December 2012

MILITARY SERVICE

Service Country: US
Branch: United States Marine Corps
Rank: Sergeant
September 1997 to September 2001

Commendations:
HONORS AND AWARDS:1998 Certificate of Commendation1999 Certificate of Commendation2000 Medal of Good Conduct2001 Marine Corps magazine In the Spotlight

ADDITIONAL INFORMATION

COMPUTER SKILLS:

Hardware

Microchip PIC18Fxxxx, AtMel 8051, TI MSP430xxxx, CC254x, STM8, STM32, Arduino Uno, ADIC Scalar, Analog Devices AD7828 & ADXL330, Tektronix TDS 3034B, Zarlink […] […] […] Tenney TU-JR, Hakko 703B 907 807, TENMA Thermometer […] Tandberg, Beagle I2C/SPI Protocol Analyzer, Agilent Technologies InfiniiVision DSO6014A, Agilent Technologies Oscilloscope DSO1014A

Software

C/C++, JAVA, Unix, Assembly, Pic Basic Pro, Bash, VIM, Eclipse IDE, Subversion, IAR Workbench, MPLAB IDE, Raisonance, Wireshark, DOS Scripting, Arduino, Keil uVision, STM32CubeMX, Abrites. Vehicle Spy 3, Ubuntu, Redhat, MATLAB, Cadence PSpice, BTool, Filemaker Pro, VM Ware, Parallels Desktop, Dame Ware, Altiris, NetIQ DRA/DMA