JOHN R. CROSSETT

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EMBEDDED SOFTWARE SYSTEMS ENGINEER: I am a seasoned and analytical Software Applications and Embedded Developer with over 25 years of diverse experience in the design and deployment of commercial and industrial adaptive software solutions within complex environments. I am experienced in object oriented analysis and design, development, and embedded programming with proficiencies in multiple languages including C#, and C++.

PROFESSIONAL EXPERIENCE:

GE Transportation: Erie Pa,Contract Software Engineer,April 2014 to April 2015 (*12 months*),**Qnx** based AC locomotive control system modifications, defect remediation. Multi- person team effort. GNU C++ development employing Perforce source control and Clear Quest project management. Worked extensively with QNX power fail safe file partitions, scripts for testing.

Vanteon / Harris RF: Rochester NY,Contract Software Engineer,October 2013 to February 2014 (*5 months*),**Qnx** based military radio system modifications and defect remediation. 12 person person team. GNU C++ development involving fixing assigned bugs sent via JIRA project management software. Cryptographic access.

Alstom Signaling: Rochester NY,August 2011 to 2013 (*18 months*) uClinux based network development ie. Custom FTP in C language on Blackfin processor. Linux user space driver development for I2C and SPI. Test driven development supporting blackfin initiative. Test code development for National Instruments Test Stand in C#. Custom test routines for emulation of simulated web service interface under Windows 7 using Microsoft WCF among other things.

R**iverstone Systems:** Westport New York,DBA,Owner/Consultant 2008 to 2011 (*~36 months*) Remote saw mill software support for Edger Optimizer product (see Silva tech) . Custom Windows GUI MFC/C++/C# applications under Windows and Linux (Mono) for RF networked interface to embedded PIC devices. Internal website development using jscript and PHP. Embedded PIC programming using C programming language. Developed PIC based firmware based assemblies to support remote monitoring and supervision using XBEE radio technology. Used MPLAB IDE and REAL-ICE emulator to expedite development and debug of the embedded code. Developed custom PIC/XBEE PCB assembly. OpenGL/MFC code coding experience related to 3D bridge simulation project.

GE Security: August 2007, Tampa Fl area, Contract Software Engineer,I worked on a legacy SQL based nurse call system application. The project involved the use of Borland C++ and Microsoft C++ to recover lost functionality in the legacy code.

Fairbanks Scales: St Johnsbury Vermont ,Contract Software Engineer,,2007.(4 months) I did custom programming on 8051 based electronic scales using C/C++/assembly compilers and various in circuit emulators. Did customer requested modifications of standard product line scales to meet specific needs. One special project involved integrating Blue Tooth serial module into a legacy electronic scale unit to broadcast scale data to nearby devices.

Silvatech Corporation: Bethel Vermont,Full Time Software Engineer,2000 to 2006 (*6 years*) Supported major development elements of a saw board optimization system. Edger Optimization Systems (EOS), use laser distance/thickness measurement systems and algorithms to determine optimal value final solution any given piece of lumber. Handled the creation of a unique software subsystem (c++ MFC based **optimizer engine**) designed to interpret (laser range finder developed) topography of rough cut lumber to determine the best possible cut values of length, width, and angle using a combination of simulating annealing and exhaustive search software techniques. In addition to the algorithm work, I also did early design and development work on the Emerson Electric PLC machine control subsystem. The typical EOS PLC controlled up to 6 motors, and up to three saw position actuators.

Green Mountain Computing: South Burlington, Vermont,Contract Software Engineer,1999 (6 months) Helped develop an Integrated Development Environment (IDE) for a VHDL programming suite using Visual Studio C++ to run in both Windows and Linux GUI environments. Wrote VHDL programs for testing, demonstration, and training of developers.

Participated in the development of a database query application used in TV ad statistical processing in **RSC/Evansville,** IN.~1998 (3 months)

GE Stream Turbine: Bangor Me.~1995, Designed and coded GE Fanac PLC using software control and supervisory system for a multiple-processor slurry blast polishing system for steam turbine parts. Also wrote the PC based human interface using Wonderware software. Managed one technician.

Cadec Corporation: Manchester New Hampshire,Contract Software Engineer (~1993 to ~1995 18 months)Used Borland C++ and OWL to develop PC GUI based software to support Cadec diesel. truck engine Controllers.

Quadtronics Corporation: ~1992 Bow N.H.(~3 Month) Created C/C++ based Windows programs using Borland C/C++ for a Bow NH firm to stress/test automotive ignition sensors for a test machine exported to Taiwan.

1988-1992: Performed operating system level testing for **Apollo Computer** in Billerica MA. Did testing work for **NEC printer division** near Littleton MA. ~1990: Implemented source control mechanism for insurance company in Manchester NH. Participated in the Lotus Notes project for **Lotus Development Corporation** in Cambridge MA. Using Delphi and SQL, Designed and developed PC based servo control interrupt code for a special photon integrator project for **MIE, Inc,** of Billerica Ma. Did on-site consulting at Delco Electronics in both Milwaukee WI and Kokomo IN, for former employer: Aerotronics Associates in Contoocook, N.H.

Yankee Solutions, Inc: President ~1985 to ~1988) Software support services

including supporting former employer with custom software solutions as well as business software sales and support applications.

Aerotronics Associates: Inc, Contoocook, New Hampshire, Full Time Project Engineer 1979 to 1985 (*total 6 years*) Participated in the development of Zilog Z80 based machine controllers--- mastered the use of Zilog assembly language and emulator to debug assembly language programs. Developed the companies' first computer based machine test system checkout machine using off-the-shelf personal computer hardware (using CP/M OS and Z80 S100 based computer) while on-site in a hotel room. In addition to writing the controlling software program, project also involved CMOS digital and linear op-amp electronic design as it related to providing both stimulus and output monitoring capability for GM engine controllers. Developed companies' first eight bit computer based Transistor Test Machine for AT@T using : CP/M using MT/PASCAL Developed first EEPROM FSM based controller for pallet handler for Apple Computer Lisa project using Turbo Pascal Developed CMOS/TTL based interface circuits for AT@T, Delco Electronics. Developed ECL based test boards for testing Control Data hard drives. Developed HP based integrated test system for aircraft power supply control system for Lear Siegler Developed DEC/VAX based system for Delco Electronics to test/stress electronic locomotive controllers. Assistant managed the installation of 15M burn-in complex at Delco Electronics on-site in Milwaukee WI in 1979/80.

Data Translation, Inc, Natick Ma, 1977-1978 (one year) Associate Engineer Did design work on computer bus interfaces for various computer bus standards of the time? One of which was the conceptual design for IEEE-488 controller for PDP-11 bus.

Fairbanks Scales, St Johnsbury, Vermont 1975 to 1977 Test Technician, QA Technician, RD Technician,Did production test and repair of electronic scale projects. Did QA tasks related to improving reliability of first generation microprocessor based scales. I Did R&D tasks related to assisting design engineers by building prototype and conceptual items. Also become familiar with Intel 4004 and 4040 assembly language.

EDUCATION

FRANKLIN PIERCE COLLEGE , Concord/Ridge, New Hampshire   May/June
Bachelor of Science, Computer Science BSCS   1986

New Hampshire Technical Institute, Concord New   1981
Hampshire ,Electronics, Computer Science, and Land Surveying Courses

NORTHEASTERN UNIVERSITY , Boston, Massachusetts, Electrical and   1980,1988
Software Engineering courses

NEW HAMPSHIRE TECHNICAL COLLEGE ,Berlin, New Hampshire   May/June
Associates Degree, Electronics AAS   1975

TECHNICAL SKILLS SUMMARY:

Skills : strong electrical and mechanical trouble-shooting/problem solving skills, Willingness and capability to travel to remote customer sites for long periods, Strong customer support background skills, Embedded/Firmware design and implementation capability, Strong spatial/GIS documentation skills. PCB design using Eagle and Design Spark tools. Strong Mechanical skills.. Automobile and motorcycle mechanic.

Technical tools: Operating Systems: CP/M, VAX/RSX-11. RT-11, Microsoft Windows (2003, 2000, NT, XP, ME, 98, 95, 3.x), DOS; Linux—Ubuntu 9.10/10.4, UNIX;Net runtimes: NET 2.0-3.5, Java , **Linux Ubuntu 14.04 QNX 6.3 ONX 6.5**
NET 3.5: Web-Services, (Mapping) Remoting(IP remote controls), Serialization(data storage and retrieval), co-development with MONO on Linux.Serialized Data Formats: XML. **WCF**
roject Management Database: **JIRA, and Clear Quest**
Hardware Emulators: REAL-ICE(PIC 16/18 /24/32), Zilog(Z80), Keil(8051). JTAG
DataBase: Paradox/Delpi, MySQL, PostGreSQL MS,SQL_Server,
3DGraphics: OpenGL/C++, DirectX
GPS/GIS: Tralaine Coordinate System Translator, Trimble, Delorme, Magallen, GoogleMAP API, ExpertGPS, Custom Coordinate Translation c++ objects, |MapObjects, MapMaker, Delorme, NMEMA sentences.
Source Control: PVCS , Subversion, **Perforce**
C++ Class Libraries: MFC,BOOST,TR1,TKOpen,STL
Interfaces: IEEE-488,RS-232, RS-422, I2C, SPI, TCIP, CAN
Pascal Compilers: Turbo Pascal, GCC Pascal
Micro Controller C Compilers: High Tech C, SDCC, Source Boost C, MicroChip C18
Other Computer Languages: Basic, Prolog,
HTML Based Languages: JavaScipt, PHP
PC C Compilers GCC, Computer Associates C, Turbo C, GYGWIN,
C++ Compilers: Microsoft, G++, Turbo C++, Borland C++
UML : SunUML
Recent Electrical: DSP,AVR,PIC 16F, 18F,CAN, I2C: LM75, DS1620,I2C ,DS3232, DS1307, FPLA/RTL VHDL for silicon I2C solutions.
PIC Micro-controllers: 16F648, 18F2520, 18F2620, 18F25K22
AVR Micro-controllers: ATMega328
In house custom PIC Applications : PIC based Quad Seven Segment Display card, PIC Controller card with RTC, Temp Sensor, and IEEE-15-04 RF serial interface.
Applications: Four cylinder Engine Controller and monitoring, Residential Remote Thermostats. RF Serial Intefaces : IEEE-15.04 MainStream-XBEE , ConnectBlue BlueTooth
Micro-controllers: Intel 4004/4040,8080 ,8051 family, Microchip 16F, 18F families, Blackfin AD533; ARM Raspberry PI and Beagle Black
Programming Tools: Databases & Support Applications: Microsoft - C, C#, Visual MFC/C++, Visual Studio 2008,Visual Studio 2005, Visual Studio Version 6, QT, KDevelop, QDevelop, MonoDevelop, Eclipse, PikLab, Code:Blocks.MPLAB,
SCADA: Wonderware Automation & Control, Emerson Electric PLC/Ladder Logic, GE Fanac PLC PCB Layout Editors: Eagle, Design Spark PCB TinyCad
CAD: TurboCad, AutoCad
Graphical Editors: Pia, InkScape,
Image Editors: GIMP, Photoshop