

## JOHN K. STEVENSON

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Experience as Computer Systems Architect, Software Developer, and Firmware Programmer. Hands-on development of embedded processors, firmware, real-time operating systems, data acquisition, and device drivers. Design of highly-available distributed processing for database and telecommunications systems. Software development including compilers, emulators, simulators, editors, protocols, and methodology.

A broad background of varied projects provides a systems level perspective. Additional skills I bring to a project are creative problem solving and the art and practice of Invention.

**Programming Languages:** C, FORTH, bash, C++, Ada, XML, TCL, LabView, Java, Python, Perl, tesh, HTML, SQL, ATLAS/ATSL, PASCAL, BASIC, Cadol, and Dibol

**Assemblers:** PPC, PIC, ARM, MIPS, 68K, 8086/8080/Z80/6502, 8048, PDP-11, and IV-90.

**Operating Systems:** Linux, BSD, VxWorks, IRIX, HPUNIX, UNIX 6/7/5, RTOS, AIX, VAX/VMS, Solaris, MS-DOS, CP/M, RT-11 and RSTS-E.

**Methods:** Agile, Pairing, Extreme, Scrum, UML, UseCase, RT Structured Methods, OOA/D/P, and , Warnier Orr Diagram, PERT/CPM, and PDL.

**Databases:** Ontology Definitions, Informix, Oracle, Postgresql, MSQl, and Codasyl standards.

**Networks:** Infiniband, TCP/IP, FC, DeviceNet, SMB, Mil-1553, SS7, Ethernet, and I2c.

**Windowing:** X, Motif, FVWM, XFree86, Windows 2/311/95/98/2000/NT/XP, and PHIS.

**Utilities:** Apex, Amus, ClearCase, RUP, RTRT, DOORS, Dimensions, Clips, and Eclipse.

**Hardware:** Clusters, HA, SAN, CPCI, MVME, Emulators, Xilinx, and Logic Analyzers

**Interfaces:** Infiniband, PCI, CPCI, VME, SCSI, ISA, RS-232, RS-422 and S100

**Standards:** Dicom, DO-178B(A), DO-219, DO-258, ARINC 429, 622, 653, ANS-Forth (Past Committee member), ANSI-C, Open Boot (P1275).

**Military:** 498, 2167A, 1679, AF190, and 1553

**Telecom:** GR-1093, GR-1129+, GR-485-CORE, ITU: I, M, Q, T, X, and Z

**Certificates:** ESD Class 0, Secret Clearance (Mar 2002).

### OTHER

Published "Scalable Linux Development Environments," **Internet Telephony Magazine**, <http://www.tmcnet.com/it/oe0200.htm>

Member of Honeywell SSO Networking Security Committee.

Past Member of ANSI ASC X3/X3J14 Standards team.

Founding member of TechSpan, Oregon, an educational training and consulting company.

USNR Sonar Technician STG2, Secret Clearance, 3 months in a conflict region, National Defense Medal. Honorable Discharge.

### EDUCATION

Several hundred hours of coursework towards various projects, in school and seminars. Taught a small number of classes ranging from Operating System Design to the Forth Language.

### EXPERIENCE

**2007 July to 2007 November** Contract Systems Analyst CEMSol for Rockwell Collins, Melbourne. Aircraft component compliance to internal and industry standards. Test Code results review. Organize Team functions. Standards involved are DO-178B Level a/b, Arinc 661, 664, Rockwell Collins internal standards, and JavaScript. Most development by Telecommuting. Geographically distributed team work.

**2006 April to May:** Systems Software Developer, Orthoscan Inc. Developed an Embedded Xilinx system, for use in a digital Medical Fluoroscope. Developed System Software in PPC, C, PIC, and Bash with Xilinx ML403 and ML405Boards; PowerPC Interrupt structure, DMA management, I2C(bit banged), ADC, DAC, RTC, serial controller, ethernet driver patches, X-ray over-dose alarm system, embedded control system, command executive, data entry editor:

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patient, configuration, diagnostics; graphics engine; Image transfer, convert, real time rotation, anti-aliased character rendering, custom font development generation, and image storage system; X-ray power control; Macintosh Image Development; medical image printer cups configuration, remote management and upgrade system; PACS Server File Header management, network administration, DVI video capture operations, Image Printing. DICOM; CTN, Conquest, DCMTK, Osirix, CDMEDIC/ReLive, Fusion2.0. Utilized Software; VMWare, Parallels, Redhat Enterprise, Ethereal, Xilinx ISE/EDK 8.2 & 7.1, Tools; RealVNC, Cygwin+XFREE, VMWare, Winmerge, SourceNavigator, Subversion, Doxygen, Ethereal, Macintosh; 10.4 Tiger, Parallels, OSXVNC, Xcode, Darwinports, Fink, CUPS, ImageMagick, Apache. Hardware; Virtex-4 FX12/20, Custom embedded card, Xilinx ML405, Xray Image Intensifier, Xray source, Mac Mini, EPIC ITX, Gefen DVI splitter, Sony image printer UP-D897, Mitsubishi Image Printer DM93, and the Epiphan DVI2USB.

**2005 September to 2006 April:** Contract Analyst, CEMSol, for Boeing IDS. Analysis of Aircraft operation standards for the C17 interoperability with Global-Air-Traffic-Management. Created HTML and Excel based data capture and reporting system, Measured systems for ARINC and RTCA standards, and generated intermediate reports. Provided reports based on Avionics Development Reports and USAF DRs. Validated CPDLC operations with DO-258, and DO-219. Utilized: Doors, Office, Amus, DO-178, Boeing Analysis Checklists.

**2005 April to September:** Contract Programmer, MindLance for Intel. Development of drivers for Testing and Diagnostics in C, FORTH, and Assembler for "Hermon" a multi processor Cellphone System-On-a-Chip. The SOC contains: ARM, Xscale, DSP, Cellphone radio control and protocol enhancement, many simple peripherals. Utilized: Code wright, GCC, Doxygen, Linux, custom FORTH, and Agilent Analyzer.

**2005 January to April:** Contract Programmer, Technisource. Ada code verification for Avionics on the GTTA-MCS-FCS. Tasks: Review and report correctness measured by internal programming standard, Prepare PRs in Dimensions, Compare code with Requirements in DOORS, ClearCase code checkout, Development of methods for quick and complete source code reviews, Bash and TCSH script development for source base analysis, Use of Emacs for collaborative development, Organized Multi-Monitor Pair-Programming as applied to verification, Use of Gnat, Apex, and Aonix compilers, And Exceed for access to a common code base on Solaris.

**2004 May to October:** Contract Programmer, NCS Corp.

Embedded systems programming for US ARMY Land Warrior Project at CSC/GD; interconnecting electronic battlefield components such as radio and "Smart Weapons," to assist a soldier in the field. Developed custom drivers and applications running under Linux 2.6 kernel to maintain real-time battle information and operational data in a secure environment.. Authored kernel APIs, build scripts, maintenance / analysis tools, and created demo system for Marketing and Training.

**2003 April and Continuing:** Writing projects, general Software Issues.

Research and Analysis, on "Performance Team Programming," detailing theories describing methods and reasoning behind top performance software techniques, such as Pair-Programming and Concurrent Design.

**2003 March:** Consulting Software Architect and Forth Programmer, Vertex.

Designed system software architecture for FORTH based Nodal Satellite Multiplexer running on TMS320C50 and MCF5307 based hardware platform. Partitioned system, described logical interfaces, solved design issues, presented findings and planning choices to management, and optimized hardware utilization to eliminate need for hardware redesign. Developed low level Object Oriented code modules. Built hardware tool set and utilized tethered development methods. Built a test workbench. Worked with development team to define software tools and NSM TSST system's operational boundaries. Utilized Swiftforth, WinForth, Leo, Logic Analyzer, Diagnostics, and XiLinX tools.

**2002 Sept to 2003 March:** Staff Programmer, Teksci. Verified test code in accordance with the DO-178B Avionics standard. Generated tests in Rational RTRT. Developed several manual-testing procedures. Utilized: IBM RTRT, Source Navigator, Visual C++, Word, and Cygwin.

**2002:** Systems Administrator, multiple clients. Built custom secure embedded Linux systems using Redhat 7.2, Mgetty, PPP-2.3, and secure remote access techniques. Performed systems administration of Windows 2000/XP, Redhat Linux, Debian and Suse.

**1998 to 2001:** Systems Architect/ Staff Software/ Firmware Engineer/ Software Engineer; Telecom Architecture, Motorola.

Designed Linux based Clustered Computing Systems, and SAN oriented Fibre-Channel Fabric based Oracle Clusters. Authored white paper on HA Clusters and published "Scalable Linux Development Environments" in Internet Telephony.

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Member of Infiniband architecture analysis group. Built Compact PCI systems and developed firmware for multiple VME/ CPCI boards. Worked with Debian developers to port Linux to Motorola MVME16/7x, 68K based boards. Fixed kernel "early start up" path to efficiently boot multiple boards. Designed Dual Processor PPC Development PCI card, Modified Motorola firmware for VME / CPCI boards using AIX and GNU tools. Built cross-compilers and modified linkers for development platform supporting Gnu toolset on AIX / Linux systems. Cognizant engineer for Clariion Denali SAN test project; built RAID test stand and developed new Denali test procedures. Developed serial port based stress testing for embedded 68K boards. Built and configured software tools, and created web content for the Telecom Group.

**1997 to 1998:** System Administrator, Honeywell Satellite Systems.

Development and support for "MDM Automated Test Environment" systems group. Created VxWorks startup and code update scripting for multiprocessor system, administrated SunOS 1.4 and development tools. Installed GNU toolset on HPUX, SunOS, Windows (DJGPP), and Linux, built automated test system installation packages for spacecraft communications simulator. Utilized RealSim, VME-RealSim, Software Through Pictures, MATRIXX, Xbuilder, and other packages.

**1997:** Systems Architect and Programmer, IsoQuantic Technologies.

Systems driver development of API, for Summa-Four Telco Switch, Developed "SELDON", Decision Support Systems (DSS), and Systems admin for on site Linux, Solaris, and MacOS.

**1995 to 1997:** Systems / software consulting, multiple clients.

**1994 to 1995:** Software Architect / Forth Programmer, AG Communications.

Design team member for the Forth based Advanced Intelligent Network (AIN), component Service-Node-Intelligent-Peripheral (SNIP), and SS7 product for Central-Office (CO) switches, providing voice response and programmable features to the network. Collected and distributed telecommunications standards to the group. Represented AGCS in several telecommunications standards organization meetings. Forth Design team member, Presented several design issues. Installed and performed systems administration for Linux in systems for use as desktop development stations and USL Linux in test stands for the SNIP project. Researched building a CHILL subset in Forth. Assisted in the changeover from SunOS to Solaris and AFS. Assisted in planning and interviewing of new team members. Utilized Object Oriented Forth, USL Linux, Solaris, SunOS, Linux, Dialogic, Open-boot, C, C++, CDE, and CASE.

**1993 to 1994:** Systems Programmer / Analyst, Naval Systems, Westinghouse.

Systems Analysis and design for a distributed data acquisition system, LabView and C, instrumentation drivers, VXI driver development and API construction. Developed serial and IEEE-488 drivers, Tested validated drivers in accordance with required standards.

**1992:** Third Party Developer at Ellery Systems Inc. Boulder Colorado,

Development of applications for Astrophysics Data System and Ellery Open System. Responsible for all Silicon Graphics development at Ellery. Developed an 8086 DOS emulator to run Word-Perfect on a 4D35 SGI.

Developed Motif based X-Windows Widgets to enter SQL queries. Developed an 8086 DOS emulator to run Word-Perfect on a 4D35 SGI. Developed with Gnu Tools and SGI tools. Systems Administration on the Silicon Graphics machine. Wrote small components in C++.

## REFERENCES

Wallace Author, Arizona, 602-881-4726

Dan Toy, Arizona, 623-581-3155

Eugene Larson, 503-232-8548