

Short Form Resume for Mark Whitis, Senior Computer Engineer

107-A Piedmont Ave SOUTH
Charlottesville, VA 22903
USA

URL: <http://www.freelabs.com/~whitis/resume/>
Email: whitis@freelabs.com (include "[JOB]" in subject line)
Mobile Phone: +1-434-409-3210

Professional Objective

senior engineer position involving software development and/or hardware design (electrical engineering).

Software Engineering (26 years experience)

Platforms: Linux, FreeBSD, Solaris, SunOS, AIX, Concentrix, Ultrix, UNIX, MS-DOS, CP/M, HDOS, Apple DOS, VAX VMS, IBM VM/CMS, Embedded.

High Level Languages: C Programming Language (21 years), C++, ADA, BASIC, FORTH, PASCAL, APL, FORTRAN, LISP.

Scripting Languages: PERL, sh, csh, bash, VMS DCL, VM/CMS Exec2, VM/CMS REXX, MS-DOS Batch, various application specific scripting languages.

Assembly Languages: 8088/V20/80286, 80386/i386, 68000/68020, DSP56001 DSP, TMS32010 DSP, 8080/8085/Z80, 1802, 6502, 6800/6801, 6805, 8051/80C552, UYK-44, IBM 370.

Program Types: Scientific Programming, Computer Security and Cryptography, Embedded Programming, Real Time Programming, TCP/IP Client/Server and Networking, WWW Web Applications, Computer Aided Design, Financial, Motor Control, Open Source Software.

Programs Developed: Large DC Motor Control, Motor controller Communications Protocol, PCB Isolation (Mechanical Etching), Stepper Motor Device Driver, Linux Device Driver for Data Acquisition Card, On-line Mutual Fund System, Secure Fault-tolerant Proxy Server, WWW On-line Store, Molecular Kinetics Simulation, Terminal Multiplexer Software, TCP/IP client/server, Financial Transaction Consolidator, P3-C Orion Sonar Buoy Acoustic Interface Unit Diagnostics, Telescope Auto-guider (star tracker), Data Acquisitions, Image Processing, Menu System, Network Tools, Data Conversion, Web based Email, Morse Code Tutor, Attendance Tracking, Survey Processing, Direct Labor Accounting, FORTH Kernel, CNC Milling Machine Control, Fabry-Perot Spectrophotometer Control, Thermal Analysis CAD, Testability Analysis, Expert System, Purchase Orders.

Web Development: HTML, XMTML, CSS, CSS2, SGML, CGI, XML, XSL, XSLT, Accessibility, Browser Independence, HTTP, Database.

Tools: GCC, Make, CVS, Emacs, XSLTproc, GDB, DDD, RPM, bison, flex, yacc, diff, patch, ghostscript, sed.

Electronic Design/Electrical Engineering (23 years experience)

Test Equipment: Fault Insertion Device, Logic Analyzer.

Data Acquisition and Control: Isolated IGBT Driver, Analog to Digital Conversion for Infrared Camera, Stepper motor Drivers, Stimulus Generator, Telescope Interface, Temperature Stabilization System, Motor Control Interface board, ATE (Automated Test Equipment) Pin Driver.

Programmable Logic: Verilog FPGA Code, FPGA Development Board Design (partial).

Microcomputer/Microcontroller Designs: Disk Controller, 6502 Microcontroller board, 8085 Microcontroller board.

High Voltage: Hazardous Voltage Indicator (1500V), Armature Voltage Measurement Circuit (2000V), DC-DC converter (1000V overvoltage protection).

Misc: Game Show Lockout Circuit, many small circuits.

Computer Aided Design (CADD/CAD/CAM): 2D CADD, 3D CADD, Schematic Capture, Printed Circuit Board Layout, Thermal CADD, Spice/GnuCAP Circuit Simulation, CNC, G-CODE, Mechanical Etching.

Electronic and mechanical Troubleshooting and Repair

Examples: radios, televisions, transceivers, stereos, theatrical equipment, computers, computer peripherals, video cameras, video monitors, lasers and laser power supplies, test equipment, sewing machines, electrical wiring, plumbing.

Computer Security

Performed security audits, Developed secure Internet applications, security administrator for company networking, Wrote secure programming chapter for textbook, Cryptography experience including SSL, PGP, SSH.

Diagnostics and Test Engineering

Mapped fault coverage of diagnostics, Wrote test coverage analysis software, Wrote test execution order determination software, Wrote embedded diagnostic software for military hardware, Installed Firewalls, Developed Firewall Software.

Computer System and Network Administration

ETHERNET, TCP/IP, Unix, Linux, FreeBSD, Solaris, SunOS, AIX, MS-DOS, CP/M, Data Center Design, Web Farm, Firewalls, SMTP, IMAP, UUCP, DECNET, Sendmail, qmail, Corvus Omninet/Constellation, Novel Netware, NFS and PC/NFS.

Reverse Engineering

Software: Lotus Device Driver, Corvus Network Adapter BIOS, Nixie Tube Display System Firmware.

Hardware: Ariel Switching Laser Power Supply, Laboratory High Voltage Power Supply, Incremental Optical Rotary Position Encoder, ISA Serial/Parallel/Joystick Adapter and Disk Controller, Computer Power Supplies, Camera Pan and Tilt Mount.

Astronomy

Large Telescope Use and Operation: Mauna Kea 3M IRTF, Kitt Peak 2M, Kitt Peak 1.3M, WIRO 2.3M, NASA Mount Lemon 1.5M, Whipple/Mt. Hopkins 1 meter, CTIO 1.5M (Chile).

Infrared Detector Arrays: Acquired and reduced BIBIB and Indium Antimonide Infrared Detector Array Software, Developed software to acquire data from infrared detector arrays, Designed Data Acquisition boards to digitize images from infrared detector arrays.

Fabry Perot Interferometer: Wrote control software, Voice Coil and Piezo Driven, Optical and capacitance micrometer position feedback.

Telescope Auto-guider: Developed Auto-guider Software.

Image Processing

Used Image Processing Software: IRAF, AIPS, Gimp, etc..

Developed Image Processing Software: Image Arithmetic, FITS file conversion, acquisition from detector array.

Other Experience

Lasers: gas lasers, solid state lasers, visible, infrared, ultraviolet, HeNe, Nitrogen, Argon, CO₂, Repaired laser tubes, Repaired power supplies.

Cryogenics: Liquid Nitrogen, Liquid Helium, Dry Ice, Instrument Dewars.

Biosecurity: Wrote document on combating bioterrorism.

Facility Security: ultrasonic motion detectors, microwave motion detectors, infrared FLIR motion detectors, code entry systems, electric strikes, electric gates, telephone dialers, audible alarms, perimeter sensors, vidicon, nuvicon, silicon target, warm CCD, SIT, ISIT, image intensifier, metascope, night vision.

Theatrical Experience: Stage Lighting, Sound, Video, Equipment Repair, Movie Projection, Scenery Projectors, Stage Carpentry.

Examination Design: Developed test questions for a Linux prequalification /certification exam used by recruiters.

Licenses/Certifications

Amateur Radio Operator License: KI4BSZ, AHA CPR Certification.

Publications

- Kurt Wall, Mark Watson, Mark Whitis. Linux Programming Unleashed (1st Ed.) . Sams (Macmillan Computer Publishing). Aug 1999.

Consulting Clients

Past Clients, Direct and Indirect: Automated Financial Systems, Digitrade, T. Rowe Price, Testengine.com, University of Virginia, Macmillan Computer Publishing, National Air and Space Museum, Smithsonian Institution, Smithsonian Laboratory for Astrophysics, Naval Research Lab, Magnavox, IBM, Raytheon, Logistics Management Institute, Mercer Management Consulting.

Employment History

- 1991-Present ; Proprietor ; Free Electron Labs
- 2002-2003 ; Senior Engineer ; Cableform, Inc
- 1995-2000 ; Chief Information Security Officer ; Digital by Design
- 1987-1991 ; Senior Systems Engineer ; Naval Research Lab Center for Advanced Space Sensing/Applied Research Corp
- 1982- 1987 ; Engineer ; BITE, Inc.
- 1982-1982 ; Engineer ; CAS, Inc.

Education

- M.S. Equivalent or higher in Electrical Engineering. 23 years of experience
Self Educated
- M.S. Equivalent or higher in Computer Science. 26 years of experience
Self Educated

Security Clearances

- US Citizen
- Confidential (expired)
- Secret (expired)