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## SUMMARY

- First class software engineering skills and experience for advanced computing applications
- Specializing in UNIX internals, communication protocols, embedded software, and hardware bring-up

## EXPERIENCE

**10/09 - present**      **Member Technical Staff**  
Google      Mountain View, CA

Developer of system software for megascale data center computing.

- Technical areas: Linux internals, firmware and boot code, new hardware bring-up, device drivers

**10/06 - 08/09**      **Member Technical Staff**  
ConSentry Networks      Milpitas, CA

Developer of firmware, embedded Linux and other system software for networking equipment.

- Technical areas: Linux internals, firmware and boot code, new hardware bring-up, device drivers, Ethernet switching
- Developed platform software for Ethernet switch products.
- Developed firmware based on U-Boot for multiple hardware platforms.
- Brought up Linux 2.6 and cross-development tool chain from scratch on proprietary PowerPC platforms.

**10/97 - present**      **Senior Staff Engineer**  
Sun Microsystems      Menlo Park, CA

Developer of Solaris networking and security components. Architect for packet filtering and encryption software products.

- UNIX internals and device drivers
- Network security and encryption
- Operating system security
- Operating system virtualization
- Java networking and GUI development

**12/95 - 10/97**      **Software Engineering Consultant**

Omnicon Data Systems Herndon, VA

Independent consulting business specializing in software engineering and system integration for UNIX, Internet, and embedded systems.

- Software engineering and consulting
- UNIX internals and device drivers
- Internet server installation, configuration, administration
- Projects included work in IP and ATM protocols and equipment, device drivers for IRIX, Solaris, and embedded systems, and Internet server integration.

**7/94 - 12/95 Senior Software Engineer**

Newbridge Networks 593 Herndon Parkway Herndon, VA

Developer of UNIX device drivers and other system software for Asynchronous Transfer Mode networking equipment.

- Technical areas: UNIX internals, device driver development and porting, TCP/IP and ATM networking.
- Developed the system software for ATM network interface cards for Sun, Silicon Graphics, and other UNIX workstations.

**10/91 - 7/94 Member of UNIX kernel development group**

Unix System Laboratories 190 River Road Summit, NJ

Member of software development team responsible for the process management subsystem of the UNIX SVR4.2 Multiprocessor kernel.

- Technical areas: UNIX internals, multiprocessor kernel techniques, open systems standards.
- Responsible for signals, process creation/termination/synchronization, job control and the `/proc` file system.

**08/88 - 10/91 UNIX Systems Software Architect**

Commodore-Amiga 1200 Wilson Drive West Chester, PA

Lead designer and kernel hacker for Amiga port of UNIX System V Release 4.

- Technical areas: UNIX internals, device driver design and development, kernel and user software porting, system design, graphics, networking protocols and drivers, STREAMS, open systems standards.
- Designed and implemented Amiga UNIX graphics system and device drivers. Developed graphics system API and presented to software developers, technical conferences, and other kernel engineers.
- Interacted with hardware engineers during development of computer hardware systems and peripherals.
- Worked closely with AT&T as an early-access SVR4 developer. Ported pre-release SVR4 kernel to Amiga hardware. Reported and corrected major kernel bugs.

**11/87 - 07/88**      **Senior Systems Programmer**  
International Robomation Intelligence    2281 Las Palmas Drive   Carlsbad, CA

Development of system software, application software and real-time operating system for computer vision systems.

- Technical areas: Computer vision, graphics, operating system internals (UNIX, Regulus, IRI RT/M), telecommunications.
- Interacted with hardware engineers during design of vision systems.
- Created cross development environment under UNIX for target vision hardware. Adapted compilers, assemblers, and other tools.

**11/85 - 10/87**      **Systems Programmer**  
CliniComp Intl.    1120 Silverado St.   La Jolla, CA

Development of clinical charting systems for use in hospital intensive care units.

- Technical areas: Graphics, IPC, UNIX systems programming, TCP/IP, BSD Sockets, ISAM, data acquisition, telecommunications.
- Modified, configured, and installed UNIX kernel, device drivers, and system programs.
- Tested and evaluated UNIX operating system ports, interacting with kernel developers.
- Designed and implemented subsystems for data acquisition, PostScript printing and custom database system and API.

**9/84 - 11/85**      **Game Programmer**  
Cinematronics, Inc.    1741 Friendship Drive   El Cajon, CA

Design and development of microprocessor-based coin-operated video games.

- Technical areas: Hardware control, graphics, multi-processor systems software, operating system internals.
- Designed and implemented graphic operating system for use by other game programmers. Prepared written programmer's documentation and oral presentations about game hardware and operating system software.
- Advised hardware engineers during development of new game hardware.
- Implemented communication systems between UNIX development computers, microprocessor emulators, and other devices.

## PERSONAL ACTIVITIES

- Hobbies include open-source software development, mobile computing and communications, computer hardware design and prototyping, music, carpentry and home improvement.
- Member IEEE, ACM. *Extra* class Amateur Radio operator.