**Bart Bartel**

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## OBJECTIVE

I am looking for a role where I can utilize my experience and expertise in driver, firmware and kernel code development. I can also contribute to code projects that interact at the lower OSI model layers.

## Core Skills

Advanced kernel driver development. Languages include C, C++, Python

Created and maintained Firmware, performed Research and Development in the areas of Device Drivers (Linux, Windows, Embedded), ANTLR, LLVM

Deliver training and key industry conference talks on advanced driver development and low-level development in storage technologies.

Advanced knowledge of Windows and Linux storage stack, including performance, reliability, driver development, debugging, research and development.

## Work Experience

**Microsoft Corp.**

Software/Firmware Engineer

Dec 2019 to Present

Redmond, WA

Microcontroller Unit firmware and Windows Driver Foundation (WDF) driver development on Surface Post-Launch Engineering product team. Debug crash dumps, reproduce field issues, engineer fixes to resolve large scale, high impact problem sets for Surface devices. Skillset focuses on driver and firmware development, and low-level kernel debugging.

**HeliTrak, Inc.**

Software Engineer and Team Lead

Dec 2015 to Dec 2019

Gig Harbor, WA

Worked on Robinson helicopter autopilots and safety equipment: Development of firmware for bare-metal custom ARM hardware, device drivers and async I/O framework (USB, I2C, Controller Area Network, RS485), prototyping and bring-up. Developed secure terminals and code generators. Performed system model verification, unit testing, coverage analysis, inertial sensor calibrations, and developed flight data visualizations.

**OSNEXUS Corporation**

Sr. Software Engineer

Jul 2015 to Dec 2015

Bellevue, WA

Software defined cloud-storage: Developed Linux system software for managing [SCST](https://en.wikipedia.org/wiki/SCST) Fibre Channel & iSCSI load-balancing and high-availability failover, interface to Java client, and developed device-mapper-based driver to evaluate perf of [CEPH](https://en.wikipedia.org/wiki/Ceph_(software))/RBDs and crush map-zone distribution.

**Western Digital**

Sr. Principal SDE

Sep 2012 to Jul 2015

Bellevue, WA

Developed Storage host PCIe bus adapters: Developed Linux kernel framework for plugging multiple storage transports (NVMe, AHCI/SATAe, SoP/PQI) for FPGA prototype bring-up, domain specific PUMA language compiler and Linux kernel virtual machine, QEMU device and firmware virtualization, and device mapper layer for a hybrid SSD/HDD drive.

**Microsoft**

Sr. Escalation Engineer, WDK Storage Lead

Sep 2003 to Sep 2012

Redmond, WA

Device driver and firmware development for 3rd party IHV/ISVs: Storport miniport drivers, disk and volume filter drivers, KMDF, MultiPath IO DSMs, file system mini-filters, and network redirectors. Delivered training and DevCon talks on Windows driver development. Debugged kernel issues and pushed fixes to sustained engineering.

**PolyServe**

Sr. Software Engineer

Aug 2002 to Sep 2003

Beaverton, OR

Cluster File System (PSFS): Developed Windows disk and partition device drivers to provide cluster-coherent namespace control of the SAN storage IO subsystem, cross-platform user-space Java client interfaces, and Windows Multipath IO DSM drivers managing multiple paths on storage arrays.

**Veritas Technologies LLC**

Staff Software Engineer

Nov 2000 to Aug 2002

Redmond, WA

Developed Windows SCSI/Fibre Channel dynamic multi-path driver (VxDMP) with MSCS/VCS cluster support for Volume Mgr. product, user-mode provider interface for Java client, and satellite drivers for 3rd party array controllers: EMC, IBM, NEC, Hitachi, Compaq, and JBODs.

**NEC System Technologies, Ltd.**

Principal Software Engineer

Nov 1997 to Nov 2000

Redmond, WA

Firmware and Windows miniport development of (MD8404) Link/PHY Chipset PCI Host Bus Adapter. Advanced development of 1394b functionality. Also developed Windows miniport driver for USB OHCI controller.

**Cirrus Logic**

Sr. Software Engineer

Aug 1996 to Nov 1997

Bellevue, WA

Developed Win9x miniVDD I/O kernel mode VGA virtualization driver for 546x chipsets. Added AGP GART allocation, DirectDraw API hooks, ACPI BIOS and multi-monitor support for Windows 98.

**Spacelabs Healthcare**

Software Engineer IV

Aug 1995 to Aug 1996

Redmond, WA

Embedded Medical Gas Analyzer: Developed embedded VxWorks-based application firmware and drivers for gas analyzer system.

**Boeing, Commercial Avionics**

Software Engineer

Aug 1992 to Aug 1995

Everett, WA

777 Avionics: Developed firmware for ARINC-629 Bus Controller ASIC, providing a bus-master DMA bridge from system memory bus to the system-wide network: VMS/XdAsm build environment, Solaris (Cadre) CASE tools, HP-UX ICE.

**Hughes Aircraft Company**

System Engineer

Jan 1987 to Aug 1992

El Segundo, CA

Developed signal processing and inertial tracking algorithms and hosted into real-time environments for AOA/AST and OSDP/MSX programs. Performed phenomenology simulations of IR sensors and high-fidelity end-to-end systems analysis. Performed trade studies of non-stationary noise (cluttered background) filter algorithms on scanning and staring sensor modes.

## EDUCATION

B.S. Physics, UCLA, 1986