Matthew E Cross

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OBJECTIVE To obtain a position developing embedded software for an interesting product at an exciting company.

EXPERIENCE

ADC Telecommunications, Westborough, MA
(formerly Broadband Access Systems, acquired by ADC in 09/00)

05/01 – present *Consulting Engineer*

- Continued advising on the design of new features, both hardware and software.
- Designed packet flow for next-generation POS OC-48 module. Features include IPv4, IPv6, MPLS, and QoS.
- Debugged & fixed critical issues in the Cuda 12000 including microcode forwarding problems and issues at customer sites.
- Ported a large body of C and C++ code from a Pentium processor to an Intel XScale processor. In the process of debugging this I discovered many hardware bugs in a PCI interface FPGA, and assisted the designer by providing tests and logic analyzer traces of the failures.

05/00 - 05/01 *Manager, Software Engineering*

- Managed a team of six software engineers developing microcode, drivers, and diagnostics for the Cuda 12000 CMTS (Cable Modem Termination System) router.
- Advised on the design of many new features.
- Mentored engineers in my group and in other groups on occasion.

02/99 - 05/00 *Senior Software Engineer*

- Ported ethernet driver for Intel's (formerly Digital's) 21143 to work with internal IP stack.
- Implemented transmit side microcode in IXP1200 network processor simulator.
- Working with a software engineer at Intel, ported VxWorks to IXP1200.
- Debugged IP forwarding microcode on real hardware.
- Investigated and implemented performance enhancements to our IXP1200 microcode.

Sun Microsystems, Inc., Burlington, MA

02/97 - 02/99 *Software Engineer, Workgroup Server System Software*

- Led a small team that designed and implemented a remote system control feature (RSC), consisting of a PowerPC MPC823 running VxWorks embedded in a 2 CPU Sun server. RSC supports environmental monitoring via I^2C, 10baseT ethernet, TCP/IP, 3 serial ports, PPP, SNMP, TAP and SMTP.
- Designed the firmware for RSC and implemented approximately 70% of it, as well as a large portion of a server-side administration utility. Assisted the hardware engineers in debugging the hardware design.
- Implemented bug fixes to the Solaris PCI support for UltraSPARC systems.
- Implemented an internal portion of CPU hot plug in Solaris based on an existing platform-specific implementation.
- Responsible for core kernel support for a new generation workgroup server. Directly responsibile for updating PCI support and debugging Solaris on a software simulator and a hardware emulator.

Stratus Computer, Inc., Marlborough, MA

04/94 - 02/97 *Software Engineer, VOS Kernel Group*

- Contributed to the early bring-up of VOS on Stratus's Continuum product line, a large NUMA SMP system based on Hewlett Packard's PA-RISC processors. Isolated many difficult operating system bugs and implemented fixes.
- Assisted the hardware team in debugging problems with Continuum's major ASIC.
- Designed and implemented bug fixes and enhancements to the VOS operating system.
- Involved in the design of a fault-tolerant Pentium-Pro based machine. Goals included: board-level integration, Windows NT compatibility, low cost. Responsible for BIOS implementation.

The Real-Time Intelligent Systems Corporation, Worcester, MA

11/90 - 04/94 *Software Engineer*

- Developed a distributed real-time message based multi-tasking operating environment for DOS, Windows, and a variety of UNIX platforms including SunOS 4.1, Solaris 2.3, SGI Irix, DEC MIPS Ultrix, and DEC Alpha OSF/1.

Stratus Computer, Inc., Marlboro, MA

5/90 - 10/90 Programmer, CASE tools group

- Designed and implemented a utility to generate a makefile from an executable program. This utility was written in C and ran on VOS.

EDUCATION **Worcester Polytechnic Institute**, Worcester, MA
Bachelor of Science, Computer Science, 1993

- Senior Project: *TCP/IP for Minix.* Working with two other students, implemented a subset of TCP/IP on Minix, a small UNIX-like operating system.

LANGUAGES C, Scheme, Pascal, Lex, Yacc, PL/1, PowerPC assembler, SPARC assembler, 80x86 assembler, PA-RISC assembler, ARM assembler, and IXP1200 microcode. Familiar with C++, Java, Ada, DEC Alpha assembler, MIPS RISC assembler, Motorola 68k assembler, and Intel i860 assembler.

OPERATING SYSTEMS MS-DOS, UNIX (Linux, SGI Irix, SunOS, Solaris, Ultrix, Ultrix MLS+, OSF/1), Windows (3.1, 95, 98, NT 4 and 2000), VxWorks, and VOS.

References available upon request.