Michael Witt

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Summary

I have over twenty years of experience in the computer and telecommunications industries, working primarily on software development for embedded systems, TCP/IP stacks, real-time kernels and network management systems. I've worked for large companies such as Intel, Tektronix, Unisys, and ADC Telecommunications, as well as for small start-ups. I also have experience in project management with both product development and operational groups.

Since 2007

In 2007 I decided to take a break, learn some new things, and work on a few projects I'd been thinking about for a long time. I went back to school and studied math and physics for several years. I wrote some open source scientific software, involving models of simple quantum mechanics systems and relativistic physics. The main thrust of this work was experimentation with computer models as an educational aid. I developed a set of course notes and Python programs aimed at teaching the basic theory of discrete quantum systems starting from a high school algebra level.

Professional Experience

2004 - 2006 Project Engineer, Oregon Route Views
University of Oregon — Eugene, Oregon

Responsible for programming, device configuration and technical writing for the University of Oregon's "Route Views" project. Assisted the Director of the ANTC with studies of the global routing system, consulted with Route Views peers and network operators to plan services and R&D efforts supporting Route Views research projects.

1999 - 2003 Contract Programmer
Self Employed — Portland, Oregon

Provided contract engineering services, including:

- Systems software design
- Embedded systems programming
- Network engineering
- Java application and applet programming
- SNMP agent software
- Network management systems

1996 - 1998 Engineering Support Manager
Verio, Inc. — Portland, Oregon

Managed the engineering staff of the Verio Oregon office. This included integrating the technical resources of two local Oregon ISPs — RAINet and Structured Networks — and transitioning them to consolidated management within Verio. Assisted in the development of both technical and administrative procedures for Verio's national network operations center in Dallas, Texas.

1992 - 1996 Project Engineer
ADC Kentrox — Portland, Oregon

Designed and implemented the company's first SNMP management system, and led the group that followed up with SNMP agents for all of Kentrox broadband products, including SMDS and ATM capable devices, as well as traditional T1 access gear. Was a principal contributor to the architecture of Kentrox flagship ATM device, the AAC-3. Supervised the software engineers who provided networking modules for various Kentrox devices, implementing TCP/IP functionality, Telnet services, ATM and Ethernet drivers, as well as a variety of network management functions. Was awarded the Kentrox "Super Star" award in 1993 for resulting increases in Kentrox sales and profitability.

1989 - 1992 Principal Engineer
Tektronix Inc. — Wilsonville, Oregon

For the Tektronix Workstation Group, completed a variety of programming tasks involving the TCP/IP implementation in the UTEK kernel, which was based on BSD 4.1 Unix. For the Network Display Group, ported the BSD Unix protocol stack to the Tektronix X Terminals. Devised a set of performance tests which produced a two-dimensional graph of throughput vs. packet size and number of simultaneous transmissions for both TCP and UDP. These tests were responsible for detecting several performance bottlenecks and coding errors in both Tektronix workstations and X Terminals. Conceived and designed a broadcast bootstrap protocol for the X Terminals. Programmed a simple distributed processing system, which was used as a demo of distributed computational techniques by Tektronix Labs.

1985 - 1989 Computer Systems Specialist
Unisys Defense Systems — Camarillo, California

Worked in the Distributed Systems research group, which was involved in numerous areas of Internet-related protocol design. Developed techniques for processing of both OSI and DoD (TCP/IP) protocols in Internet gateways. Implemented experimental SNMP based software.

1983 - 1984 Programmer
Micro Five Corporation — Costa Mesa, California

Designed and supervised the implementation of a suite of communications protocols to connect PCs to Unix servers. The protocols were based loosely on the draft OSI standards of the time, but were not fully OSI compliant. This work was done for a joint venture between Micro Five and and the French conglomerate Jeumont-Schneider.

1982 Programmer
Informatics General Corporation — Canoga Park, California

Developed the initial architecture for a workstation product. Evaluated potential hardware OEMs, including Sun Microsystems and Convergent Technologies. Programmed a number of modules in Pascal for "TAPS," a relational database system.

1980 - 1981 Programmer
Technicolor — North Hollywood, California

Designed and implemented a Local Area Network for the film color processing department. This network allowed Technicolor to eliminate the central DEC color processing computer which had become overloaded, and move to a distributed system based on 8080 microcomputers.

1977 - 1979 Programmer
Systems Development Corporation — Santa Monica, California

Contributed to the design of the first "Blacker" security front end for use in the Defense Data Network. Programmed numerous modules in C, assembly language, and low level microcode.

Technical Skills Summary

Programming languages: Python/Cython, Java, C, Basic, Pascal, Fortran, various assembly languages

Operating systems: Unix, Linux, VxWorks, embedded kernels and RTOS

Communication protocols: TCP/IP and related Internet protocols, ATM, and Frame Relay

Publications

Running TCP/IP over ATM Networks, *Telecommunications,* July 1995

Managing SMDS Devices via In-band SNMP, *Telecommunications,* March 1995

A Comment on Current Source Routing Techniques, *Computer Communication Review,* July 1987

Specifying the Security Properties of Communication Systems (with Nina Lewis)
Security Audit and Control Review, Summer 1987

Moving from DoD to OSI Protocols: A First Step, *Computer Communication Review,* April 1986

An Introduction to Layered Protocols, *Byte Magazine,* September 1984