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Objective

Seeking position as a product development engineer with a focus on systems architecture and object-oriented software development on Unix and Linux systems. Specifically interested in opportunities in the North Dallas, Texas area (including Richardson, Plano, Carrollton, and Addison), or which may be performed remotely (via phone and Internet) from my office in Dallas.

Capabilities And Experience

Leadership

- Systems Architect
- Development team leader
- Scheduling and management
- Recruiting and selection
- Cost estimates and tracking

Operating Systems

- UNIX system administration
- UNIX software development
- POSIX API expertise
- NFS/NIS/SMB network administration
- Microsoft Windows

Network Development

- TCP/IP network administration
- TCP/IP Sockets API programming
- Server development
- SNMP agent development
- VOIP, RTP, SCTP

Literacy and Presentation

- Author architecture documents
- Author design documentation
- Chair design reviews
- Author technical magazine articles
- Review technical publications.

Software Development

- C++ (18 years)
- C (22 years)
- UNIX scripting (PERL, sh, awk, & Tcl)
- Multi-threaded programming
- OpenMP (multi-thread extension for C/C++)

System Design

- Large systems
- Distributed systems
- Networks
- Fault tolerance and high availability
- Real time constraints

Technical Publications

"Building Your Own WWW Server", BYTE Magazine, April 1995.
"WebNFS: A File System for the Web", BYTE Magazine, November 1996.
"Expect offers Unix Scripting", BYTE Magazine, April 1997
"Autoconf Makes for Portable Software", BYTE Magazine, November 1997
"Writing JavaScript Applications", BYTE Magazine, February 1998
"Real Time Goes Mainstream", BYTE Magazine, July 1998

Acknowledged Expert Reviewer

"UNIX Network Programming, Networking APIs: Sockets and XTI, Volume 1", W. Richard Stevens, Prentice-Hall, 1998
"UNIX Network Programming, Interprocess Communications, Volume 2", W. Richard Stevens, Prentice-Hall, 1999
"Programming Web Graphics with Perl & GNU Software", Shawn P. Wallace, O'Reilly & Associates, 1999
"Graphics Programming With Perl", Martien Verbruggen, Manning Publications, 2002

Authored Open Source Software

Magick++, the portable C++ API to the ImageMagick image processing library.

GraphicsMagick, a portable image processing suite. Principal maintainer of GraphicsMagick since November, 2002. Prior to that, a major contributor (since 1997) to ImageMagick, upon which GraphicsMagick is originally based. GraphicsMagick is the core image processing engine used by Flickr (the world's largest photo upload site) since the beginning of 2005.

Experience

Principal Maintainer / GraphicsMagick / November 2002 - Present / Dallas, Texas

Responsible for the continued design and implementation of GraphicsMagick, a large (300K lines of code) open source image processing package since November 2002. GraphicsMagick is an independent fork from ImageMagick, which I worked on from 1997 to 2002. In addition to performing most feature development, and preparing all releases, I am responsible for maintenance of the associated web site, ftp site, and source control system. The most recent development has multi-threaded the software using OpenMP so that it is dramatically faster on modern multi-core systems. GraphicsMagick is used at some of the highest profile Internet sites, including Flickr, the world's largest photo sharing site. GraphicsMagick has been the core image processing engine used by Flickr since January 2005, and has processed many petabytes of image files (billions of files) without any reported issues.

Independent Contractor / Magnasync/Moviola / March 2005 – March 2008 / Hollywood, California

Performed design and development related to many aspects of a large multi-channel audio recording system for POTS, T1/E1 links, and VOIP. Areas worked on include (but are not limited to): system initialization, networked real-time computer screen capture & playback (with synchronized audio and video), SMDR/CDR parsers for 19 different switches, fault detection and alarming, event reporting, time synchronization, database (PostgreSQL & MySQL), SNMP agent development, audio compression, data archiving/backup, serial port driver, OS API wrappers, Linux, and Apple OS X.

Senior Software Architect / ReQuest Multimedia / October 2003 to April 2005/ Ballston Spa, New York

Participated in the development of the ARQ4 and VideoReQuest products. The ARQ4 is a highest-end Linux-based networked, database-driven, multimedia component for high-definition audio playback (envision an iPod on steroids with a terabyte of disk). The VideoReQuest provides a database-driven GUI interface to Sony DVD changers. ARQ4 is implemented in C++ and VideoReQuest is implemented in Java. The VideoReQuest product was awarded CEDIA's Best New Product award in 2004.

Discarded and re-implemented the initial implementation of the ARQ "port" from QNX4 to Linux 2.6.X in order to dramatically improve stability and performance. Implemented CD RIP and audio transcode capabilities. Performed Linux kernel modifications as required in order to improve bootstrap times and appearance suitable for a consumer product. Participated in system architecture, design and code reviews, and interviewed potential employees.

Implemented Linux initialization and support code for the AudioReQuest product.

Staff Engineer / Alcatel USA / January 1995 to June 2002 / Dallas, Texas

Systems Architect for Alcatel Signaling Server (next generation Switching Transfer Point) product. Duties involved requirements analysis, high level system design of system hardware and software. Wholly responsible for Ethernet switch matrix design.

Systems Architect for Alcatel USA VOIP Access and Trunking Gateways. Duties involved requirements analysis, high level system design, Ethernet switch matrix design, load analysis, performance estimation, and system operational scenarios.

Lead a team which developed a portable object-oriented protocol-independent messaging subsystem in C++ to support a large fault-tolerant telecommunications system. Duties involved requirements analysis, high level design, API design, coding, development of an automated test suite, performance evaluation, and tuning. Underlying technologies used are UNIX, POSIX, Solaris, LynxOS, pSOS, TCP/IP and the Berkeley Sockets API.

Developed a software build environment for a large (500K lines) C++ development project, with over sixty software developers, and supporting eighteen different build targets.

Software Tools Engineer / Interphase / October 1992 to December 1994 / Dallas, Texas

Took on the challenge of transforming a highly-anarchistic and fragmented software development organization consisting of groups using different development toolsets and isolated computing systems into a much more uniform and friendly organization using a single toolset (based on GNU open source tools) and sharing computing resources. Represented the Engineering organization in dealings with the computer services department. Led a team which performed system administration for the computers (30 UNIX workstations, 25 servers, and 65 X terminals) which comprised the Engineering network. Set up a corporate web server so that [Interphase](#) was one of the early web sites on the Internet.

Independent Contractor / TIL Systems / July 1992 to September 1992 / Toronto, Canada

Performed embedded SNMP Agent development for an X.25-based TCP/IP & IPX router.

Systems Programmer / PUREDATA Research / September 1991 to July 1992 / San Antonio, Texas

Responsible for firmware development of an SNMP agent for a 10BASE-T Ethernet concentrator based on software licensed from SNMP Research.

Systems Engineer / Alamo Technology / September 1986 to September 1991 / San Antonio, Texas

Project Lead for MK12/12A RSTS Mass Memory Module development program. Responsible for managing (and recruiting) four other engineers. Duties involved project scheduling, PERT diagramming, GANT charting, project cost estimates, job task assignments, project reviews/reports, and engineering reviews besides normal engineering design duties.

Lead Engineer for the design and development of an automated test system called ETTAS used by the USAF to test all of its jet, turbo-fan, and turbo-prop aircraft engines. Performed all interface design for the system. Developed requirements and design specifications. Responsible for supervising initial installations. Responsible for developing embedded firmware (written in C) for a data acquisition system. Supported the development of specialized printing and analog measurement assemblies to replace outdated equipment in a nuclear weapons test system.

Education

B.S., Electrical Engineering, St. Mary's University of San Antonio.