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BS in Computer Science from
Colorado State University
More than 26 years experience
with computers.

Summary

Senior Computer Scientist and Software Engineer, Development Project Manager, Object Oriented (OO) Analysis, Design, Programming and Maintenance Teacher and Mentor, Team and Project Lead with **extremely** diverse range of experience.

- Produce in depth analysis of complex systems.
- Complete system designs based on business needs.
- Fast, accurate, low error rate programming.
- Innovative, creative solutions.
- Extremely cost conscious.
- Implement multi-platform, standards based, portable systems.
- Continuous self improvement, a self-starter.

Professional Skills

***Programming Languages*:** Ada, BASIC, C, C Sharp, C++, Erlang, FORTRAN, Forth, Java, JavaScript, Objective-C, Ooc, Pascal, Perl, PL/SQL, Prolog, Python, Ruby, Smalltalk.

Query, Definition and Markup Languages: SQL, PL/SQL, PL/pgSQL, QUEL, POSTQUEL, SGML, Postscript, HTML, XML, LaTeX, TeX and lbDefine.

System Management: CIMv2, SNMP, SMI-S, CQL, WBEM and CIM over HTTP.

Interpreted Languages/Scripting: Awk, BASH, Bourne Shell, C Shell, JavaScript, Korn Shell, Perl, PowerShell, Python, Ruby, Tcl/Tk.

Operating Systems: Unix (Xenix, Linux, SunOS, HP-UX, AUX, Unixware), MS-DOS, OS/2 and Windows 3.11, 95/98/NT/2003. Designed and wrote two small real time multi-tasking operating system kernels. Have written device drivers for Xenix, Linux, HP-UX, Amiga and MS-DOS. Have experience writing and maintaining Unix file systems both real and pseudo (proc type), as well as dynamic memory management, system primitives and process management.

Graphical User Interfaces: X Windows programming using the X library, X Intrinsics, Xmt Toolkit, GTK, Athena, Qt and Motif. Wrote several special purpose widgets for use with both Athena and Motif. Wrote a complete GUI wrapper system that allowed for portability between multiple systems, as well as writing a concrete implementation for this system for X Windows. Have experience with OpenStep/GNUstep, and GLADE and other XML based GUI definition languages.

Microprocessors/Assembly Languages: Assembly programming on the Zilog Z80, the Intel 8080, 8085, 80186, 80286 and 80386, the Motorola 6800, 68000, 68010, 68020, the National Semiconductor 32000 series, PA-RISC 1.1 and 2.0, Itanium 2, and finally the 6502 and 6809. Also, have micro-programming experience on very long instruction word processors.

Database Systems: Wrote several data base systems from the ground up. Familiar with data base algorithms. Designed schemas for and have written programs that interface to Unify, Sybase, Empress, PostGreSQL and Oracle data base systems. Have worked with hierarchical, relational and object oriented (Exodus and Shore) data base systems.

Networking: Have created programs that use raw sockets, Sun RPC, Java RMI, CORBA and Distributed Object systems. Programs used many different open standards including Kerberos 5, SMTP, NNTP, TELNET, HTTP and FTP. Familiar with installing, configuring, administrating and programming for the Kerberos security system.

Language Design: Have designed data structuring languages, as well as computer languages. Am familiar with compiler-compilers (Bison, Yacc), scanner generators (flex) and recursive descent parsers and interpreters. Have some experience with natural language parsing and interpretation.

Web Application Programming: Ruby on Rails, TurboGears, Ajax, HTML, CSS, CSS2, JavaScript.

Source Control Systems: Subversion, RCS, CVS, Clearcase.

System Administration: Linux, HP-UX and other Unix-type operating systems including administration of Exim, Sendmail, DNS, DHCP, NTP, FTP, SSHD, Apache, Jabber, Mailman, iSCSI, NFS, CIFS and Kerberos 5 services.

Professional History

F5 Networks — Dec 2011 - Present

- Worked on team supporting, fixing and extending Web Accelerator module of BIG-IP product.
- Supported data storage sub-system of web caching module, including extending it to support clustering, multi-level and multi-zone caching and soft failure modes.

Integware — July 2009 - July 2011

- Worked on team performing data extraction, packing, checking, transport, importation, transformation, loading and verification of large database spread across 39 different systems.
- Taught team basics of encoded character sets, character set conversion and the risks, verification and side effects of moving data from one encoding to another.
- Researched, designed and implemented data flow based data migration domain specific language. Implemented system to check correctness of rules, repair rules and then translate rules for execution.
- Implemented scripts and programs in multiple programming languages to assist in performing the ETL-V process as well as automating many of the manual steps.
- Performed SCM and IT Services work as required.
- Taught Security modeling, metrics, management and assessment and performed security audit and management duties. Wrote web application code specific to Dassault Enovia MatrixOne system, as well as several small standalone systems.

Redhen Systems — September 2010 - December 2010

- Worked on contract to add new capabilities to GIS product.
- Suggested improvements system based on Oracle GIS capabilites.
- Gave guidance in how to set up and test PostgreSQL and use of PostgreSQL GIS extensions.

Hewlett Packard — May 2007 - March 2009

- Created new design pattern and implemented a storage hardware abstraction layer to unify multiple different storage models.
- Investigated, designed and prototyped method for booting Linux on blade server systems using PXE and then rooting server on an iSCSI volume.
- Implemented adaptor using WBEM, XML, TELNET, SMI-S and HTTP to manage storage servers from a remote management station.

- Investigated and experimented with complete IPv6 setup in order to determine maturity, applicability and functionality for use in storage networking.
- Investigated, designed and described complete security design for storage networking on both trusted and untrusted networks.
- Implemented platform services compatibility constraint system that supported after market sales of new services, superior flexibility and reduced technical support costs, as well as providing dramatically improved error reporting and analysis to users.
- Analyzed existing and new code and changes to same, designed, wrote and implemented test plan for both new components and final integration testing, performed integration and ad hoc testing on multiple platforms.
- Designed, wrote and implemented a distributed, survivable storage area and resource management system.
- Investigated replacing existing management solution with portable, consortium backed, open source solution based on Java.
- Wrote multiple programs to perform migration of data from existing storage system to new storage system, as well as to migrate data formatted in ad-hoc way to new, structured form and back to original ad-hoc format.

Hewlett Packard July 1999 - May 2007

- Designed, implemented and used new software development methodology (HDM). Used HDM to dramatically reduce defect rates, increase engineer productivity and quality of customer experience.
- Developed HDM web application tools to perform management, planning, analysis, and tracking.
- Developed new object oriented (OO) systems programming language, based on C (Ooc). Created run time system, kernel primitives, re-usable objects library and multiple development support tools for Ooc. Ooc and tools integrated with HDM management tools to reduce cost of management and increase management visibility into development process.
- Used new OO systems programming language, support tools and HDM to develop new OO USB driver for HP-UX, as well as a pseudo file system to improve customer experience with respect to device special files attached to USB devices.
- Implemented multiple USB class drivers including mouse, keyboard, printer, mass storage and camera drivers.
- Performed security analysis of customer use cases surrounding USB mass storage usage. Used said analysis to drive implementation of layered, whole-device encryption of USB mass storage devices.
- Taught OO and advanced software engineering, led team, performed first level management functions and mentored engineers.
- Led team to produce more comprehensive test support systems. Analyzed, design, wrote and executed multiple types of test for component, sub-system, system and integration testing. Analyzed test equipment and infrastructure needs then used analysis to justify funding for equipment acquisition, to allocate space, power, connectivity and work station furniture for use in new test lab.
- Wrote programs that translated, modified and migrated source code from originating language into new language with less than 2 percent error rate.

USDA, NRCS ITC HelpDesk August 1996 - July 1999

- Taught OO and graphical user interface (GUI) design and mentored staff in design patterns and use of GUI tool kits.
- Designed and implemented new GUI tool kit.

- Analyzed business process, formalized and documented business process and work flow and suggested improvements and economies.
- Designed new distributed, OO help desk system with emphasis on conforming to existing standards and platform independence of code, the creation of re-usable components, and the range of test from component to final qualification.
- Performed technical lead tasks, including tool and systems functionality assessment, return on investment calculations, and acquisition and testing of new tools and systems.
- Performed data migration from existing help desk data base system into new system.

LOCALTouch Directory Services June 1994 - July 1996

- Met with customers to determine needs and requirements. Analyzed requirements, formalized description of business process and work flow and then designed support systems and tools targeted at optimizing business process.
- Designed, wrote, tested and supported software for business process.
- Implemented first hyper-text documentation system to optimize distribution of information, description of business process work flow, systems status and project tracking figures.
- Performed system administration and IT support duties for both Unix systems and MacIntosh work stations.
- Performed data migration from multiple types and sources of data.
- Wrote and executed report extraction, contract, contact and lead data extraction, document formatting and printing.

Avalanche Development January 1993 - May 1994

- Designed, wrote, tested and maintained readers, parsers and writers for converting a variety of documents from one format to another.
- Performed extensive reverse engineering on commercial data file formats to support development of BNF description of file format language for use in generating parsers for said data files.
- Debugged and extended regular expression parser developed in house.
- Debugged and extended in-memory document data base system.
- Performed extensive systems integration testing.
- Performed Unix systems installation and administration.
- Wrote GUI's for new conversion systems.

US West Information Technologies May 1992 - November 1992

- Designed, wrote, tested and maintained a proxy SNMP agent as part of an enhanced customer access service system that unified a number of existing systems.
- Wrote data communications protocol for cross systems communication of structured data using protocol that did not guarantee delivery of data.

Space Tech February 1991 - May 1992

- Performed basic and applied research to develop re-targetable compiler for synchronous, non-homogeneous multiple-memory domain, and multiple non-homogeneous ALU, very long instruction word, microcoded computer architectures (S-MIMD) that supported a re-configurable cross-bar, multiple memory domain interconnection systems, and multiple types of data flow paths.
- Developed linker for code generated for and optimized to run on multiple-memory domain systems.
- Invented artificial intelligence (AI) based code generator and scheduling system, as well as memory domain targeting optimization system.
- Tested compiler, demonstrating optimal code generation at the block level for a given architecture.

Info America August 1988 - November 1990

- Added to and maintained a multi-media script execution system.
- Debugged, modified and extended a BASIC interpreter, adding a number of new statements and control structures to it.
- Wrote programs to migrate (convert) multi-media scripts from old format to new, as well as edit, merge, and split scripts. Also wrote programs that analyzed and reported metrics of and resources used by multi-media scripts.
- Created new user input components to simplify, guard and optimize user input.
- Wrote new data base system optimized for the creation, storage, editing and use of compiled multi-media scripts.
- Wrote device drivers for advanced user input devices such as credit card readers, touch screens and special printers.

Republic Telecom Corporation June 1987 - July 1988

- Wrote x86 assembly to run out of EPROM on raw hardware.
- Wrote code to add functionality to add to existing voice digitization, compression, multiplexing and de-multiplexing system.
- Wrote remote access management system.
- Designed, implemented and tested real time operating system to allow development of new systems using C and a re-usable set of system programming primitives.
- Performed extensive testing using a variety of tools.

Automated Controls Inc. August 1986 - March 1987

- Added routine to perform orifice plate flow metering to existing natural gas well head computerized control system.
- Wrote data base to optimize storage of, additions to and retrieval of production data. Migrated existing production data into new data base.
- Added support for exceptional event sensors including violation of heat, flow and pressure constraints.
- Added logging system to generate archival copies of hour by hour production data.

MotherBoard Corporation July 1985 - January 1986

- Designed and implemented complete replacement to existing application.
- Extended commercial data base source code to optimize access to and ordering of data.
- Wrote new user interface system that supported character windowing.
- Wrote program to migrate existing customer data into new system.
- Added many new application functions to enhance value of product.
- Invented method for communicating data from portable tracking hardware into application.