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Education

B.S., Physics, University of Idaho, Moscow, ID

Additional Education: 19 semester credit hours taken at the University of Nevada Las Vegas, toward a master's degree in computer science. 39 semester credit hours taken in fine art. 480 seminar class hours completed in computer science and software engineering.

Skills Highlight

- Software engineering/development and analysis
- Applications programming
- Scientific programming
- Specification and requirements engineering
- Formal, mathematical methods
- Software testing, validation, quality assurance
- Technical evaluation and writing
- Ability to analyze, formally describe, solve a wide-range of complex problems

Computer Hardware: HP-UX PA-RISC, HP 9000/HP-UX 11.0 Server, Sun SPARCstations, Digital Equipment Corporation (Alpha, VAX, PDP-11, DECSYSTEM-20), personal computers (HP, Dell, Compaq, Gateway), Apple Macintosh, IBM Mainframes, Cray Y-MP2/216 Supercomputer, Convex C-220 Supercomputer, Control Data Corporation 6400, Pyramid Technology, Sperry Univac 9200.

Programming Languages: Java (self-study only), C, KornShell, Cshell, Perl, Pascal, VBA macro programming, Metrowerks CodeWarrior (an IDE with C, C++, Java, and Pascal), FORTRAN; Haskell 98 (advanced, purely functional language); make, GNU Make, SPSS statistical package, Oracle Pro*C (C/embedded SQL), Oracle PL/SQL, Oracle SQL*Plus, IBM Informix ESQL/C (API for embedding SQL into C programs), gdb/wdb (GNU debugger for C language), SQR, HTML, JavaScript, Sperry Univac assembly, Burroughs assembly, Digital Control Language, COBOL, RPG.

Software Packages and Databases: Relational Database Management Systems include Oracle, Informix, DEC/Oracle Rdb; other Oracle products (Enterprise Data Management System, Data Conversion Tool, SQL*Net, SQL*Loader), Toad (Oracle database development tool), PeopleSoft, Microsoft (Access, Excel, FrontPage, Word, Visio), WordPerfect, Adobe (FrameMaker, Photoshop, PageMill), Deneba Canvas, Visible Analyst Workbench (CASE tool), UNIX version control systems (RCS, CVS), DEC Code Management System, vi, emacs, lint, cflow, various other editors and tools.

Operating Systems, interfaces, architectures: J2EE, BEA WebLogic, Microsoft ISA Server, Apache, HP-UX 11, UNIX, Sun Solaris, publish/subscribe client-server middleware, DCE Distributed Computing Environment, EDI Electronic Data Interchange, X-Windows/Motif, TCP/IP, DEC (VMS, OpenVMS, RT-11, TOPS-20), Microsoft Windows XP Professional, NT, 2000, and 95, MS-DOS, Mac OS X, Convex UNICOS, Control Data Corp. NOSBE, IBM VM, Sperry Univac 9200 NCOS, various terminal emulation software such as WRQ Reflection and xterm.

Summary of Relevant Experience

Extensive computer programming experience in both the government and commercial sectors. Background includes analysis, specification, implementation, and test throughout the software development life cycle on several types of

systems. Experience and interests center upon software engineering, correctness, and formal methods, particularly involving use of UML Unified Modeling Language, Problem Frames, JSD Jackson System Development, JSP Jackson Structured Programming, finite-state machine models, grammars, Z, predicate logic, ORM/NIAM Object Role Modeling/Natural Language Information Analysis Method, executable specifications, Haskell (advanced, purely functional language). Solid understanding of type classes, class methods, class instances, inheritance, polymorphism, overloaded operations, object-oriented analysis and programming.

Experience Details

10/04-4/28/06 Systems Analyst/Programmer, Modis, Roseville, CA

Under contract to Hewlett Packard, Roseville, CA, performed maintenance involving software development, requirements analysis, problem and data analysis, software specification and testing. Work centered on Material Specification Master (MSM) - an engineering database providing component specifications, parametrics, symbols, geometries, etc., for CAD systems in the design of Printed Circuit Assemblies (PCAs). Utilized HP's FSA Flexible Schema Architecture (type of object-oriented service to enforce data integrity and consistency). Maintained database vocabularies (data types). Extensive programming in KornShell (ksh), SQL, SQLN (FSA client, interpreted language for creating and executing transactions to distributed FSA server-managed datastores), Perl, JavaScript, FrontPage, cgi programming. Extensive use of Microsoft Excel for data analysis and presentation. Formalized specifications using descriptions such as ORM/NIAM diagrams, Jackson tree structure diagrams, Haskell, finite-state machine diagrams. Wrote technical documentation, performed training. *Environment:* distributed client-server, HP-UX (UNIX), Informix, CORBA/Orbacus, FTP, BatchNet, X/Motif data entry and search programs, HP Intranet, Web-based interfaces, Advanced Tracking Machine and idb (Interactive Database) for entering/analyzing part change requests, Samba, WRQ Reflection. MSM also interfaces with SAP applications via BatchNet, FTP.

2/04-8/04 EIA Test Implementation Lead Engineer, Sapphire Technologies, Sacramento, CA

Under contract to Hewlett Packard, Roseville, CA, installed/deployed, configured Java applications in J2EE-compliant environments using BEA WebLogic Server instances. Performed integration and system testing, involving application response to correct and malformed XML messages, verifying backend database server failover occurs under appropriate conditions, ensuring correct error numbers are displayed to gui, verifying backends are operational and reachable, confirming automatic restart of managed servers after failure, application response measurement (ARM) data is produced, etc. Tested, corrected installation guides for production use. Created/updated test cases documents with log file output and screen captures of gui messages. Assisted HP Entitlement Services development lab with configuration and testing. Performed diagnosis, support of problems occurring in J2EE test environments. Created, dispatched "change requests" using Westar/Clarify. *Environment:* distributed client server, Java, J2EE, BEA WebLogic Administration Server, Managed Servers and Node Manager, Web clients, Apache, UNIX (HP-UX), publish/subscribe and Point-to-Point messaging, CORBA/Orbacus, JDBC/ODBC, XML, Oracle, ksh, sh, HP OpenView (GlancePlus, ARM, Smart Plug-ins, etc.), log4j logging system, Microsoft ISA Server, HP Security Manager/database. Used Primavera TeamPlay (IT Project Office) to record hours worked against activities.

12/02-8/03 Contractor/Administrative Assistant, CalStaff, Sacramento, CA

Worked for above office staffing agency on temporary assignments. January 15 to March 11 was assigned to a health research and funding organization, Sacramento, California, where I successfully designed, implemented, and documented a significant data transformation function using Microsoft Visual Basic for Applications (VBA) and Microsoft Access. Task also involved using macros in Access, and GUI development. Designed, implemented a statistical report using Microsoft Excel. From June 13 to August 1, while assigned to a cable television contractor, performed clerical work and analysis of the client's business processes in order to recommend computer automation regarding inventory management and human resources management. Note that I took these positions as a stopgap in a difficult job market.

10/00-6/02 Project Technical Lead, Softmatrix, Inc., Roseville, CA

Under contract to Hewlett Packard, Roseville, CA, responsible for new development, enhancements, and defect correction to HP's Part Into Product Enterprise system (PIPE), a materials management and cost system. Tasks involved all aspects of the software development life cycle, including requirements gathering and analysis, specification, implementation, and testing. Resolved several technical problems with PIPE encountered during dual Informix database and HP-UX 10.x to 11.0 upgrades. Also performed much of the programming when, later, PIPE was converted from an Informix to Oracle database platform. Constructed graphical tree structure grammars and finite-state machine diagrams to analyze and solve certain types of problems and ensure correctness. As a result of the quality of my work, Softmatrix, Inc. was awarded

additional contracts with Hewlett Packard. Architecture and technology: distributed client-server, deployed on HP 9000/HP-UX 11.0 (UNIX), HP-UX C, Oracle 8i RDBMS, middleware implementing the *publish/subscribe* (a.k.a. *observer*) design pattern; GUI client interfaces, Web-enabled interfaces, and batch interfaces. Development involved proficiency in C programming, KornShell programming, Oracle Pro*C (C/embedded SQL), Perl, HP-UX, GNU Make, GNU debugger (gdb/wdb), RCS revision control system, Oracle SQL and SQL*Plus, Oracle SQL*Loader, Toad for Oracle (database development tool), Informix RDBMS, Informix SQL and dbaccess, vi, cflow, and other UNIX utilities, Reflection terminal emulation, TCP/IP, remote access programming via DSL Digital Subscriber Line. Used Microsoft Word and Visio to develop technical documents.

9/99-9/00 Software Engineer, Maxim Group, Sacramento, CA

Under contract to Hewlett Packard, Roseville, CA, had full responsibility for software development and enhancement of fixed and dynamic-length product content box labels regarding manufacturing of HP's line of computer servers. Performed C programming on distributed client-server HP-UX environment (UNIX), involving extensive list processing, use of database APIs, ZPL Zebra Programming Language for Zebra thermal-transfer printers, SQL and ZPL embedded in C. Performed drafting/precision layout of graphics and text, analysis of work object relationships, bill-of-materials, structure of "building blocks", and substantial use of SQL in both development and testing. Environment and tools also comprised DCE Distributed Computing Environment, HP PA-RISC workstations, CVS version control system, Informix RDBMS, Informix dbaccess, wisql (graphical Informix interface), nedit, vi, KornShell, TCP/IP. Used a PC / Windows NT 4.0, for word processing, spreadsheets, drawings, email, etc.; considerable use of HP Intranet for information and analysis. Received special recognition from Hewlett Packard, Roseville, CA, for successful implementation of significant software component of the Country of Origin Project, also for programming accomplishments in the HP Channel 2000 project.

9/97-3/99 PAC Programmer, Merck-Medco Rx Services of Nevada, Inc., Las Vegas, NV

Performed software development and quality assurance to Pharmacy Automation Controller (PAC) using C, Perl, DCL Digital Command Language (shell scripting) and Oracle Rdb RDBMS. Developed software to generate various reports, including ad hoc database queries to support management requests. Met with users, gathered, analyzed requirements, developed software specifications, constructed prototypes, performed implementation, developed documentation. Additionally, provided production software support and troubleshooting. Implemented, tested enhancements to a critical, frequently executed stored database procedure; achieved factor of thirty-five performance increase. PAC interacted and communicated with networked Programmable Logic Controllers and subsystems, to guide all aspects of a fully-automated, robotic, mail order pharmacy, involving prescription order entry, bottle and drug scheduling, bottle labeling, routing, capping, conveyor and carrier movement, drug dispensing, replenishment, packaging, shipping, RF handheld control units, etc. Environment consisted of Digital VAX Alpha cluster, OpenVMS; Microsoft Windows 95, Windows NT, TCP/IP, Ethernet, Novell, WRQ Reflection terminal emulation, Uniface database GUI. Gained some experience with Microsoft Visual C++ 6.0.

1/97-9/97 Application Programmer, ITT/Caesar's World, Las Vegas, NV

Using the propriety Oracle products, EDMS Enterprise Data Management System, and DCT Data Conversion Tool, developed a program to convert mainframe legacy system data to Oracle RDBMS 7.3.2 for use in PeopleSoft applications; approximately 250 transformation rules implemented in Oracle PL/SQL. Also wrote the specification, employing a description language with a clear, precisely defined semantics (Haskell, an advanced, purely functional language). Tested the conversion results using Oracle SQL*Plus and PeopleSoft. Completed four PeopleSoft courses held in Pleasanton, California. An in-house Oracle consultant provided me extensive training and assistance with the Oracle EDMS, DCT, and RDBMS. I also developed a software application in the language, SQR. Environment was client-server based, consisting of UNIX, Microsoft Windows NT servers, and PCs running Microsoft Windows 95.

7/96-12/96 Programmer/Analyst, DynCorp Information & Engineering Technology, Fairfax, VA

11/95-6/96 Software Engineer II, Universal Systems & Technology, Inc., Fairfax, VA

8/95-11/95 Software Engineer, The Matrix Group, Las Vegas, NV

Contracted to a U.S. government facility located in Las Vegas, NV. Although the staffing companies I worked for changed during the interval August 1995, through December 1996, I worked on a single project, in an ongoing role, for the client. Responsibilities involved writing test procedures and conducting glass-box unit-level testing of software components for a multiple-host communications and information system involving Electronic Data Interchange (EDI) applications. I successfully applied an approach based on grammars to determine logic errors. The task also involved writing extensive technical documentation. Used formal methods to precisely describe problem domain subject matter. Developed UNIX shell scripts, C programs, SQL scripts. Work was performed in a UNIX X/Motif, Windows NT,

Informix RDBMS, distributed client-server environment. Contributed technical expertise to process improvement per the Software Engineering Institute Capability Maturity Model (SEI/CMM).

12/92-5/95 Systems Assistant, National Supercomputing Center for Energy and the Environment (NSCEE), University of Nevada Las Vegas, Las Vegas, NV

Worked as student employee for NSCEE part-time while taking courses during regular spring and fall semesters, worked full-time during summers. Performed UNIX shell script and C programming on Sun SPARCstations, including testing, quality assurance to project involving storage and retrieval of satellite-collected image data utilizing Storage Technology Nearline robotic mass storage system. Under Letter of Appointment from the Harry Reid Center for Environmental Studies, December 1994, developed SPSS Analysis of Variance program for use in analyzing data which resulted from investigation of variography; also wrote a report on the project. Produced Internet Web publications using HTML, Netscape, Mosaic, Adobe Photoshop, xv, ImageMagick, Sun SPARCstations, Convex, Macintosh computers, HP scanners. Using Adobe FrameMaker, wrote operations manual for various hardware systems used at the Center. Performed data backups, monitoring of systems, also scheduled, assisted students for monitoring and backups.

6/84-2/91 Programmer Analyst III, Scientific Specialization, EG&G Energy Measurements, Inc., Las Vegas, NV

Performed software development, including requirements engineering, specification, implementation of relational database systems for scientific applications. Produced conceptual, semantic data models using NIAM Natural Language Information Analysis Method and ORM Object Role Modeling, constructed library of approximately five-hundred database access routines. Computing environment consisted of DEC VAX/VMS, PDP-11/RT-11, networked Apple Macintosh computers, VAX Pascal, Pascal/embedded SQL, Oregon Software Pascal, DEC Rdb RDBMS. Projects involved (a) improving accuracy in real arithmetic computations, (b) signal analysis and reduction problems and systems, (c) information system to provide characterization of electronic circuitry and instrumentation, including CAMAC-based instrumentation, transducers, detectors, etc., and (d) design of an information system concerning transducer, detector, and test instrument calibrations, procurement, inventory, tracking and disposition of electronic equipment, etc. On latter project, used Jackson System Development method to describe a model of real world domains. Constructed software to transform discrete file-based signal data to relational database semantics by designing an analogic model of the problem domain; wrote a formal specification (52 pages) utilizing grammars to achieve correctness. Involved in writing refutable specifications free of implementation bias, using precise, explicit designations of domain phenomena. Developed technical documents utilizing Apple Macintosh computers, Deneba Canvas and Microsoft Word software. Gained experience in programming Macintosh computers.

2/81-6/84 Systems Analyst/Programmer, Reynolds Electrical & Engineering Company, Inc., Las Vegas, NV

Lead analyst/programmer providing software enhancements and support to a dynamic information system concerning low-level radioactive waste management, transport, tracking, and disposal of radioisotopes. Performed programming in FORTRAN, Pascal on Control Data Corporation 6400. Task also involved meeting with users to determine new requirements. Developed dosimetry analysis software. Lead analyst in charge of definition and development of an information system for the identification, tracking, and reporting of hazardous materials.

Various Companies (prior to 1981)

Performed business and commercial programming for various companies in Boise, ID. Developed numerous applications in Sperry Univac assembly language, with special emphasis on decimal arithmetic, involving tracking the decimal point, as the instruction set did not contain decimal operations. Worked for Burroughs Corporation, Detroit, MI, where I developed and published statistical, economic order quantity, bond price/yield packages in assembly language for Burroughs programmable printing calculator.

Personal Information:

Past member of the IEEE Computer Society, Association for Computing Machinery, and Digital Equipment Corporation Users Society. Received award of excellence from U.S. Department of Energy for significant contribution to the Nuclear Weapons Program, 1989. Previously held a U.S. Department of Energy 'Q' clearance.

References upon request. Willing to relocate.