

Steven Russell Brodhead

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EXPERIENCE:

Summary: Architect, Project Manager, Project lead.

Java, J2EE, Weblogic, Middleware, EJB, XML, J2EE, CORBA, Networks, Servlets, JSP, C++, Perl, HTML, Oracle, OO Design & Analysis, Linux System Admin.

Unix, Linux, Windows.

TXU Corporation (Oncor)

Dallas, Texas

Development Team Lead, Architect for Polaris Data Warehouse. EDI X12, Data Warehousing, Oracle, Java, Perl, Solaris, Linux, Windows 2000.

Project background: Texas Energy Deregulation Pilot & Market Open, \$11 Billion annual invoice transactions, 100 million annual total EDI transaction volume. Represents 80% of electrical power for the entire state of Texas. Data warehouse annual storage requirement: approx 1 Terabyte. (3.5 terabyte Oracle database)

The Texas Pilot (3 months before Market Open) revealed the need for tools that track missing/bad EDI transactions. The huge number of transactions meant that simple tools like Microsoft Access/Excel were inadequate. Built a Java/Oracle EDI parsing engine prototype to load an Oracle data warehouse. One month before Market Open, the Polaris project received funding for servers and a 7 man development team. Polaris went live at Market Open.

Led team that developed Java servlet Web interface and Java Swing GUI tools for analyzing and reporting on problem transactions. Architected and built the core Java engine for parsing/loading 400,000 transactions daily into Oracle warehouse. Built System and DB Administration tools.

2001 - 2002

Wrox Press

Birmingham, United Kingdom

Co-author, *Java XML Programmer's Reference* published late July 2001. Wrote chapters on Oracle's XML toolset and Querying XML. XML, XSL, XPath, JAXP, XSQL, Oracle 2001

Centcom Inc.

Colorado Springs, Colorado

President. Architect of *iConduit*, a Java + XML based data integration platform. Partnered with University of Missouri-Rolla to develop the product. Built core engine, which manages distributed transactions, high speed data streaming, and data validation/repair. XML architecture for both data streaming and metadata storage. Java, XML, SAX, RMI, JINI, Oracle, MS SQL Server, Perl

Business management, fund raising, contract negotiations, sales, operational management.

<http://www.centcom.com>

1997 - Present.

Missouri Enterprise

Rolla, Missouri

Missouri Enterprise, a state funded Technology Transfer & Business Development organization is providing funding to Centcom to develop the core engine of I-Conduit. 2000 - Present.

Solant (acquired by Avolent)

Longmont, Colorado

Contract designer/developer for portions of a Web based E-Billing presentation & payment application. XML, XSLT, J2EE, BEA Weblogic AppServer, Oracle, EJB, UML, Java. 2000.

Kana Communications

San Mateo, California

Contract Architect/Developer for Database Transport & Messaging API (DBAPI). In its simplest form, imports and validates customer's data into Kana Connect's Oracle database. Real time messaging of Events from customer's systems via Java RMI to CRM database. Code generation of JDBC table wrappers. Java, Java JDBC, Java RMI, Java Reflection, Oracle. 1999.

Health Systems Design (acquired by Perot Systems) Oakland, California

Acting Director of Engineering overseeing development and QA of Diamond 725 and Diamond Visual Plus. Supervised combined team of approx. 20 people. These two products represent about 65% of HSD's sales.

Contract development of multi-threaded Java proxy server. Proxy server does protocol conversion between sockets and named pipes on both NT & Unix. Java networking & Java Servlets. 1998.

TIBCO Software

Palo Alto, California

Contract lead developer of Java version of TIBCO's CORBA Object Request Broker (ORB). Object Bus is one component of Tibco's Active Enterprise platform. ORB was built using Java JNI to talk to C++ Orb kernel. TIBCO is one of the leading vendors of E-business middle-ware. This major product enhancement was done in a very short timeframe, 4 months. 1997-1998.

MCI Communications, Inc.

Colorado Springs, Colorado

Engineer IV. Java, Java networking, Java multi-threaded servers, Java RMI, Java Beans, Java native methods, Java/CORBA, 3-tier Java thin-client Client/Server, Internet applications, OO Design/Analysis. C++ GUI, C++ Custom Controls, C++ Client/Server Architecture, Windows NT & 95 & 3.1, Sun Solaris and DEC UNIX, TCP/IP network programming.

MCI is leading the industry by converting its large Windows C++ client/server apps to Internet hosted, Java thin-client applications. This massive effort is considered one of MCI's "top 5 strategic development projects". I spearheaded the Java server networking and communication infrastructure for MCI's 800/888 Toll Free Network Management product. My colleague's have dubbed me a "Java Guru" for mastering the breadth of technologies required for this task.

Developed replacement large capacity listbox controls for use under Windows 3.1. Lead Windows developer, creating custom controls, and troubleshooting problems due to defects in the C++ class libraries and tools used. Contributed to three different projects at MCI: Outbound Network Manager (OTNM), 800 Network Manager, and PC CarrierView. Awarded 1100 stock options in recognition of my contributions to the OTNM project. Ported a TCP/IP client server communications library, Registry, from OS/2 to Windows 3.1. Registry is now MCI's primary API for cross platform communications. A patent is pending related to my invention of replacement large capacity listbox controls.

Lead developer of PC CarrierView, a Windows GUI based application for the display of 800 number routing and customer information. This is a Client application interfacing to a remote Server on IBM mainframes. Ported a TCP/IP based communications package to Windows 3.1. A complete GUI prototype for the project was constructed using Visual Basic. Collaborated with an IBM mainframe team generating the Server portion of the app. 1994 to 1997

American Technical Resources, Inc.

Colorado Springs, Colorado

Systems Engineer. C++ GUI, Communications, Computer Graphics, User Interface Design, Client/Server Architecture. Architect/Development Lead.

Contract development for MCI of PC CarrierView, a Windows GUI based application for the display of 800 number routing and customer information. On June 6, 1994, I converted from being a contractor to a full time employee for MCI. 1993 - 1994

XVT Software, Inc.

Boulder, Colorado

Senior Software Engineer. Project lead for the MS Windows and Windows NT versions of the XVT Portable GUI Toolkit. Responsible for overseeing the development team of 4 engineers, who extend/maintain/test the Toolkit product. Maintenance of the X Motif version of the Portable GUI Toolkit using Motif, X Toolkit, and Xlib programming. 1993

Laser Magnetic Storage International

Colorado Springs, Colorado

Principal Software Engineer. UNIX kernel internals including device driver and specialized file system for optical disks under SunOS 4.1. SCSI device driver. LMSI developed an optical file system compliant with the ECMA 167 standard as a file server solution to be sold with their optical hardware products. CD ROM device driver development for DOS. Courses taken: SunOS Internals and SunOS Device Drivers. 1992 to 1993

Auto-trol Technology, Inc.

Denver, Colorado

Advisory Software Engineer. New Product Marketing and Development. System Architect. Project Leader for multiple projects. Compiler Technology. Object Oriented Database Technology. Motif & X Windows. Relational Database Technology. C++. User Interface Management Systems (UIMS). Geographic Information Systems (GIS). CAD-CAM systems software development. UNIX & C/C++ Guru.

My contributions to Auto-trol's product line and profitability have been significant and far-reaching. One product I conceived and developed, Graphics SQL, is one of Auto-trol's gold mines. Developed for under \$50,000 dollars it has generated approx. \$4,000,000 to date in sales. It is Auto-trol's second best selling product. Objex, a C based application language used to develop complex applications, has an even greater sales potential. I have a long history of conceiving, designing, and developing robust, innovative tools that serve as the architectural foundation for about one-third of Auto-trol's sales.

My conception and development of the Objex Graphics Programming Language (a C superset) and Graphics SQL are both industry firsts and have helped Auto-trol to clearly differentiate its products from other CAD vendors' products. (Six years after Graphics SQL's release, AutoCad Release 12 now includes an SQL option.) I produced a complete business plan for Objex, specifying an OEM marketing strategy.

I have been project lead for several products including Fourteener COGO, a Civil Engineering surveying and coordinate geometry application, a GIS project, and the Objex C based macro language. At times, I have been responsible for coordinating as many as 6 people's development activities. Fourteener COGO is Auto-trol's second largest ever software product comprising over 250,000 new lines of C and C++ code. In spite of its size and complexity, it was developed by only four developers in 2 years time.

I conceived and developed the C++ based object oriented database system (OODBMS) which is incorporated in Fourteener COGO. The OODBMS was comprised of approximately 60 different classes. A GIS topological mapping database schema was also built on it. This OODBMS has enabled Auto-trol to build a state-of-the-art application hitherto impossible with older technology. I have about three years experience developing software with C++.

I prototyped a complete application development environment (a super UIMS) incorporating an X Windows User Interface Editor, (WCL), a runtime application language (Objex), a relational

database interface (Graphics SQL variant), a relational database (Empress or Oracle), a 3D graphics modeling library, and the Fourteener X windows forms utility. The ultra-fast turnaround of Objex (5 second versus 10 minutes for C) enabled us to produce this in several weeks as a spare time effort. (The entire application's User Interface, form definitions, SQL queries, and the actual X callback functions could be modified and debugged as the application ran. Only bugs found in the underlying C libraries required exiting and relinking the application.)

I have five years experience developing X Windows tools and applications. I ported one of Auto-trol's graphics systems, G3, to the X Windows environment. I implemented a complete X Toolkit Widget set which included the following widgets: Pushbuttons, RadioButtons, Labels, Menus, RadioMenus, Cascading Pull-Down Menus, Popup and Persistent Dialog Boxes, Form Entry Fields, Text Edit Windows, Command Line Entry Windows, Command Echoing Windows, Text File Viewing Widgets. 1985 to 1992.

Abbot Laboratories

North Chicago, Illinois

Process Engineer. Responsible for sheet and blown-film extrusion, and extrusion blowmolding operations. Active in process and project engineering at the plant level. Achievements include major upgrades of existing processes and overseeing start-up of new processes. 1981 to 1984.

E. I. DuPont

Wilmington, North Carolina

Process Engineer. Responsible for design and construction supervision of a pilot plant within the process development group. 1979 to 1980.

EDUCATION:

University of Texas at Austin

Austin, Texas

Worked towards Master's Degree in Electrical Engineering (MSEE). Course work emphasized Computer Engineering and Digital Design. Research specialty covered the design and implementation of compilers for specialized programming languages used by Electrical Engineering applications.

Graduate Grade Point Average: 3.875/4.00 28 Hours.

Undergraduate Grade Point Average: 4.00/4.00 10 Hours. May 1984 to May 1985.

University of Chicago

Chicago, Illinois

Master of Business Administration (MBA), Honors. Concentrations in Marketing and Finance. Elected to Beta Gamma Sigma. Graduated in the top 10% of the 1983 class. University of Chicago's Business School was ranked No. 3 in nation by Business Week, 1999.

Grade Point Average 3.700/4.00 September 1980 to June 1983.

Louisiana State University

Baton Rouge, Louisiana

Bachelor of Science Degree, Magna Cum Laude, in Chemical Engineering (BScE). Graduated August 1979 in top 5% of class. Elected to Phi Kappa Phi, Tau Beta Pi, Phi Lambda Upsilon. Allied Chemical and Shell Companies Scholarships.

Grade Point Average: 3.838/4.00 Attended 1976-1979.

Rice University

Houston, Texas

Worked toward degree in Chemical Engineering. Brown Engineering Award.

Grade Point Average: 3.63/4.00 Attended 1974-1975.

References available upon request.

October 11, 2002.