

John Joseph Roets

Software and Enterprise Architect, SOA Expert, Systems Integration Specialist

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Overview

- Service Oriented Architecture [SOA] expert with over eight years SOA framework architecture experience
- Enterprise Architecture Expert
- Messaging Systems and Web Services expert
- Over nineteen years of professional development experience in the Information Technology industry, including over nine years of JAVA, six years of C++, and fourteen years of C.

Associations

- Free Software Consortium Founding Member and Services Governing Body Director/Coordinator
- Lawrence Area Java Users Group Founder
- Kansas Unix & Linux Users Association Member
- International Association of Software Architects Member
- Lockheed Martin Software Process Methodology Working Group Member
- Association of Open Group Enterprise Architects - Associate Member

Education and Certification

- Saint Mary of the Plains College, Dodge City, KS; May 1992; GPA: 3.925
- Bachelor of Science Degree; Major: Computer Science/Data Processing
- Bachelor of Arts Degree; Major: History -- Magna Cum Laude
- Academic Achievement with Honors -- Order of Campanile
- Saint Mary of the Plains College President's Honor Roll -- GPA 3.923
- National Dean's List -- 1990, 1991
- 100% Yearly Achievement Award DSI 1998 and 1999
- Sun Certified Programmer for the Java 2 Platform
- Linux Professional Institute Certified -- LPIC1
- Senior Licensed ZapThink Architect (LZA Senior)

Technical Summary

Languages/SDK:	Java 2 (1.2,1.3,1.4), Java (1.1.6-), J2EE, Java Servlets, JSP, JMS, JNDI, EJB, Java Cryptography (JCE), Java2D, IBM MQSeries Java/JMS/C, XML SAX Parsers, XML DOM Parsers, Perl, Perl modules, SOA and Web Services [SOAP, XML-RPC], UML, HTML, PHP, C/C++ on Code Warrior for Palm Computing Platform, embedded systems programming in ANSI C, PalmOS SDK, Informatica PowerConnect SDK, Aware NISTPack
Database:	Oracle, PostgreSQL, Informix, MySQL, MS SQL Server, Access, FoxPRO, PalmDB, SQL, RDBMS
Operating Systems:	Sun Solaris Unix, IBM AIX Unix, HP-UX, Linux [GNU/Linux], Debian Linux, Ubuntu Linux, RedHat Linux, RedHat Enterprise Linux, Fedora, Slackware Linux, Mandrake Linux, White Box Linux, FreeBSD Unix, Mac OS X, Windows (2000, NT 4.0, 98, 95, 3.1, 3.11), DOS, PalmOS, WindowsCE
Platforms:	Xen, VMWare, Apache HTTP Server, Apache Jakarta Tomcat, Apache Axis [SOAP], Apache Jakarta Struts, BEA WebLogic, LAMP, Sun iPlanet, BEA Tuxedo, MS IIS, IBM MQSeries, JBoss, JBossMQ, elementSOA Framework, GeoTools GIS toolkit
IDE/Development:	Eclipse, NetBeans, Forte for Java, JBuilder, IBM VisualAge for Java, Symantec Cafe, CodeWarrior for PalmOS, vim/vi editor, MS Visual Basic (5.0, 4.0, 3.0), MS Visual C++, Make
Source code processing:	Apache Jakarta Ant, Subversion Revision Control System, CVS, PVCS, SCCS, Sun Teamware, Visual SourceSafe, Rational Requisite Pro, Rational ClearQuest, CruiseControl
Systems Administration:	Unix, GNU/Linux, DNS, Bind, Apache HTTP Server, Apache Jakarta Tomcat, WebLogic, JBoss, SSH (Secure Shell), Telnet, FTP, inetd, xinetd, CVS, CVS pserver, iptables (NetFilter), ipchains, firewall configuration, NTP, PostgreSQL, MySQL, Sendmail SMTP, POP3, Perl5, ColdSync, Mgetty, init process, TCP/IP networking, NetSaint (Nagios), AWStats, SQL-Ledger accounting, Bugzilla, systems mirroring, systems backup, Xen, VmWare, Virtualization
Management/Leadership:	Organizational planning/management, project management, free/open-source project management, design review, team lead, software manager, hiring, team building, Agile software development methodologies

Experience Highlights

createTank 6/2000 -- present

Chief Architect/Vice President/Software Division Director/R&D Director

- FBI CJIS Division Technical Architecture
 - Enterprise Architecture
 - Service Oriented Architecture [SOA] Expert
 - Review and audit of technical architecture documents
 - Architecture document and presentation writing
 - Enterprise architecture guidance
 - Communication with business, executive, and engineering staff
 - Prototyping and Proof of Concept activities
- Corporate hiring responsibilities
- Contract development responsibilities
- Contract proposal writing responsibilities
- Founder of Order of Vitruvius, Interdisciplinary Architectural Research Group
- Open Source [FOSS] projects team building
- Service Oriented Architecture [SOA] expert
- Enterprise Application Integration [EAI] expert
- Research and Development of Advanced Architectural Concepts
- Leadership of team of software architects, designers, and developers.
- **elemenope** - Creator and maintainer of open-source [GPL & Apache] Enterprise Application Integration [EAI] Service Oriented Architecture [SOA] and general messaging framework.
 - **elemenope** is the premier Open Source [FOSS] SOA and EAI Framework.
 - **elemenope** provides the capability for massive decoupling of an enterprise's components through standardized interfaces for communications.
 - **elemenope's** Service Oriented Architecture [SOA] predates by many years the coining of the term "SOA" and provides the most powerful SOA technology available today through separation of service transport protocol from business logic implementation. For more in depth information on this and other architectural features, please read the architectural features chapter of the [elemenope User Guide](http://elemenope.org/doc/userguide.pdf) -- [<http://elemenope.org/doc/userguide.pdf>].
 - **elemenope** allows an organization to easily create a large scale multi-platform application to conduct messaging or transaction processing.
 - **elemenope** abstracts away most connectivity issues and promotes integration of new software with legacy applications through simplification of connections.
 - **elemenope** simplifies architecture of large systems by standardizing functional components and message pathways. One can very easily trace problems or collect metrics at multiple levels, as every unit of application functionality implements the same interface, and all requests follow a similar path.
 - **elemenope** serves as a R&D platform for advanced architectural concepts. **elemenope's** market share provides solid evidence for effectiveness of particular architectural concepts.
 - **elemenope** implements the following connector sets:
 - Java Message Service [JMS]
 - Synchronous JMS
 - Native IBM MQSeries (WebSphereMQ)
 - Web Services (SOAP, XML-RPC)
 - Direct Call
 - Built-in mainframe connectivity classes for use when connecting to a mainframe running IBM MQSeries with the IMS Adapter or IMS Bridge
 - **elemenope** has been in development since 1999. It and some of its precursors are currently in production use within innumerable organizations and international corporations. The **elemenope** site has registered over 50,000 downloads of the framework to date.
 - More information may be obtained at elemenope.org.
 - Utilizes Java, J2EE, JMS, MQ JMS, C for MQSeries, Web Services [SOAP, XML-RPC], JNDI, Apache Axis, Apache Xerces, Apache ANT, Apache Jakarta Log4j, XML, Bash.
- **xc** : XmlConfiguration for Java - Creator and maintainer of open-source [GPL/LGPL] Java class library allowing simplified parsing of configuration files written in XML. It allows multiple methods of extraction of attributes from an XML file. Perhaps the most powerful method of extraction is `getPropertiesListByPath()`, which allows passing of a UNIX style path as a String, in order to specify a specific set of nodes within the XML configuration file. This functionality predates XPath. XmlConfiguration has been in development since 1999. It is currently in production use within many professional organizations and major international

corporations. More information may be obtained at xmlconfiguration.org. Utilizes Java, J2EE, XML, Apache Xerces.

- OOGA Open - Research and architecture of open standards based and Object-Oriented Genetic Algorithms [GA] framework. OOGA is a framework to facilitate implementation of a standardized library of published Genetic Algorithms [GA] as well as experimentation with advanced distributed GA. Multiple distributed populations are supported, as well as complex individual types.
- Vespucci - Architecture/design of GIS/Geospatial SOA Framework. Project and organizational management. Utilizes Java, J2EE, XML, GeoTools, Quantum GIS, elemenope.
- RosettaType - Free and open source [FOSS] Project to research and implement multiple engines for generic software object abstraction to a common structure [RosettaType]. Allows transport of any object over any implemented transport, to/from any language in standardized fashion. Implementation of JMS, XML-RPC, Direct, and XML engines. Definition of RosettaType common structure within XSD document(s). Utilized Java, XML, XSD, XML-RPC, JMS, Java Reflection API, Castor object to XML mapping [OXM].
- Teramoto Research Project - Architecture/design of GIS application for seismic event and resultant compressional wave (P-Wave) mapping and study. Utilizes Java, J2EE, XML, GeoTools, Quantum GIS, Vespucci, elemenope.
- createTank support - Creation of internal organization providing support for open source (free) software, and software without classic forms of support available. Migration of current createTank clients to support site.
- OMAT Research Project -- Research and design of application framework for generic implementation of GA wrappers for neural networks. Utilizes genetic algorithms, neural networks, fuzzy logic, Java, Joone Framework, Perl, Perl DBI, C++, PostgreSQL RDBMS.
- j2-Palm -- Design/Architecture of package emulating Perl's p5-Palm. For generic use when reading/writing Palm database files (.pdb) with Java.
- Development and maintenance of network infrastructure.
- Designed, developed, and maintenance of company network firewalls (ipchains, iptables [NetFilter]).
- Architecture and development of a generic reporting engine. Using Java/Java2/J2EE, PHP, Java2D, JDBC, XML, HTML, PostgreSQL, Jakarta Struts, jpGraph, Apache/Tomcat Web Server.
- Published articles/tutorials/books:
 - [elemenope User Guide](http://elemenope.org/doc/userguide.pdf) -- [<http://elemenope.org/doc/userguide.pdf>]
 - [Articles published on createtank.com](http://createtank.com) [RSS] -- [<http://createtank.com/author/joe/>]

Pragmatics, Inc. 3/2006 -- 4/2007

Software Architect and Intelligence Liaison

- Unable to disclose some project details.
- Strategic planning for major military biometrics system
- Integration of various systems into a production environment
- Planning and communications arrangements between various parties involved in transition and integration
- Creative team building across agencies and disciplines
- Review of processes, documents, and software
- Software Engineering and Technical Assistance to United States Military Agencies
- Languages/Libraries -- Java, J2EE, elemenope, Hibernate Object Relational Mapping [ORM], XML-RPC, HTML, XML, Castor Oracle, BASH shell scripting, BIRT reporting engine, Aware NISTPack Biometrics software, Perl
- Operating Systems -- Linux (RedHat Enterprise Linux Workstation and Server), Windows
- Application Servers -- JBoss, Apache Jakarta Tomcat
- IDE -- Eclipse
- Tools -- Subversion revision control system, Ant, CruiseControl automated build environment, CVS

Lockheed Martin 5/2003 -- 3/2006

Senior Software Systems Architect [SR STF]

Identity Management

- Member of Software Process Methodology Working Group
- Hiring role
- Specialized in team building
- Unable to disclose some project details.
- DoD ABIS
 - Software team lead
 - Architect of SOA Framework for major military biometrics system
 - Led software team in implementation of customized Agile software development methodology for continuous integration.

- Languages/Libraries -- Java, J2EE, eJenope, Hibernate Object Relational Mapping [ORM], XML-RPC, HTML, XML, Castor Oracle, BASH shell scripting, BIRT reporting engine, Aware NISTPack Biometrics software
- Operating Systems -- Linux (RedHat Enterprise Linux Workstation and Server)
- Application Servers -- JBoss, Apache Jakarta Tomcat, ActiveMQ, Geronimo
- IDE -- Eclipse
- Tools -- Subversion revision control system, Ant, CruiseControl automated build environment
- N-DEX
 - Design team software lead
 - Prototype implementation team software lead and deputy manager
 - Requirements team software representative
 - Development of Software Development Plan
 - Led software team in implementation of customized Agile software development methodology
 - Won approval for implementation and usage of Linux OS for software development environment within United States Government
 - Drove architectural and technical aspects of COTS integration effort as integration team contributor
 - Led approval and implementation of open source IDE for use within United States Government
 - Developed and implemented Agile methodology based process for adaptive and corrective maintenance task prioritization and completion.
 - Languages/Libraries -- Java, J2EE, SOAP, XML-RPC, C, C++, Perl, Perl Modules, HTML, Pro*C, XML, eJenope, Castor Data Binding Framework, Oracle, Oracle PL/SQL, XSU for Oracle PL/SQL, BASH shell scripting, BEA Tuxedo, Informatica PowerConnect.
 - Use of Global Justice XML Data Model [GJXDM], Use of Global Justice XML Data Dictionary [GJXDD] in creation of generic and transparent types for data transportation and processing.
 - Operating Systems -- Sun Solaris, HP-UX, Linux (Fedora, White Box)
 - Application Servers -- JBoss, Sun iPlanet, BEA WebLogic, Apache Jakarta Tomcat, Apache Axis
 - IDE -- Eclipse, NetBeans, JBuilder
 - Tools -- Rational ClearQuest, Make, SCCS, Sun Teamware, CVS, Ant, CruiseControl automated build environment

BBC, Inc., Kansas City, MO/Salina, KS 1995 -- Present

Architect/Developer/Systems Administration (partial owner)

- Establishment, design, and coding of patented inventory system.
- Holder of United States Patent No. 5,986,219 on inventory system.
- Establishment, design, and coding of Palm handheld computing solution for data entry. The data entry system runs on Palm handheld devices, employing over 48,000 lines of code, and utilizing 19 Palm databases. The Palm code is written in C and C++.
- Project *emineo* details:
 - Design and development of a server system running on GNU/Linux, Unix, and Windows 2000 servers. Utilizing Java2, J2EE, JSP, ASP, Java Servlets, Apache Jakarta Struts, Perl, C++, VB, PostgreSQL, CodeWarrior IDE for Palm Computing, NetBeans IDE, Apache Web Server, Apache Jakarta Tomcat, MS IIS, Apache Jakarta Log4J, GNU/Linux, Windows 2000 Server.
 - Conversion/redesign/recoding of entire Windows based system to GNU/Linux.
 - SirDad [Self-Regulating Data Analysis and Determination] -- Conception, architecture, and development of system to analyze data following processing, and to take configurable actions based on analysis outcomes (also configurable). Utilizing Java2, J2EE, JDBC, PostgreSQL.
 - BBCRE [BBC Reporting Engine] -- Architecture, design, development of reporting engine based on engine developed at createTank. Re-engineered/re-factored for use within BBC. Multi-platform reporting utilizing Java2, J2EE, JSP, Java Servlets, JDBC, Apache Jakarta Struts, PostgreSQL, Apache HTTP Server, PHP [LAMP].
 - BBCA [BBC administration] -- Architecture, design, development of multi-platform web-enabled configuration application utilizing Java2, J2EE, JSP, Java Servlets, Apache Jakarta Struts, Apache HTTP Server, PHP [LAMP].
 - ePa {the Processor} -- Architecture, design, development of dynamically pluggable transactional processing engine designed to process transactions received from Palm devices. Translated and refactored from original VB of BBS1 on Windows 2000 system. Completely configurable. Utilizing Java2, J2EE, JDBC, PostgreSQL.
 - CBI - clone.build.install] -- Architecture, design, development of application to generically build Palm database files (.pdb) to provide data and rule sets to data entry devices. Translated and refactored from original VB of BBS2 on Windows 2000 system. Completely configurable. Based upon architecture of createTank's j2-Palm package (Java emulation of Perl's p5-Palm). Utilizing Java2, J2EE, JDBC, Java I/O, PostgreSQL.

- BBC_OutputDB ColdSync conduit [ESync] -- Design/development of conduit for translation of Palm databases to usable server files. Utilizes Perl5, Perl DBI, ColdSync Perl package, p5-Palm package, PostgreSQL RDBMS.
- ColdSync OSS project contributions -- Contribution of code to ColdSync OSS project [Gnu GPL] for use when synchronizing via modem. Utilizing C, C++, lex and yacc, GNU Make.
- ISe -- Database architecture for entire BBC system. Creation of tables, triggers, views, functions within multiple PostgreSQL databases.
- System mirroring -- Design, coding, and systems administration of automated mirroring and backup procedures. Allows immediate backup of store and forward data, multiple nightly backups of all databases to remote servers, and weekly backups of all nightly backup files to CDROM.
- International planning team -- Planning and design of systems to provide services to client network in Kuala Lumpur, Malaysia. Utilizing Java/J2EE, Perl, Web Services, rsync, ssh, ColdSync, PostgreSQL.
- Network Architecture -- Architecture of entire network, utilizing multiple servers, multiple dynamically configurable smart firewalls and routers. Utilizing GNU/Linux (RedHat and Slackware Linux), DNS, Sendmail, POP3, Bash, Perl, Awstats, NetSaint, NTP, Apache HTTP Server, Apache Jakarta Tomcat, ColdSync, Sun's Java SDK, PHP, PostgreSQL, iptables (NetFilter).
- Systems Administration -- Responsible for administration, security, maintenance, and stability of entire system and network. Design and creation of scripts and applications for use in monitoring, maintenance, and automation of entire system.
- SA Training -- Training of junior systems administrators. Responsible for systems administration training of general GNU/Linux, ColdSync, Apache HTTP Server, Apache Jakarta Tomcat, PostgreSQL, security logging, BBC SA scripts and applications.
- BBC applications training -- Training of staff and client representatives in the use of all applications employed within the BBC system.

Free Software Consortium 2/2003 -- 8/2004

Founding Member

Services Governing Body Director

- Directorship/Leadership of the Services Governing Body, managing a consortium of over 250 consultant firms across 6 continents.
- Project and organizational management -- Planning and fulfillment of Services Governing Body functions. For further details, see [SGB services offerings and procedures](#).
- SGB Implementation Phase I & II -- Development and planning of services group's functions. See details at [SGB Implementation Phase I & II](#)

Compuware Corporation 2/2002 -- 5/2003

Architect/Developer Analyst/Engineer Assigned to Sprint LTD, NIDA group

- ICE Phase II -- Architecture/development of major system integrating large groups within Sprint's Local Telephone Division. Robust, scalable, and configurable system, operating 24X7, processing over one million MQSeries messages daily. Development of generic MQSeries related connectors for use in communications with mainframe machines using IMS (IMS Bridge and IMS Adapter). Utilizing Java, J2EE, JNDI, elementop Framework, MQSeries (WebSphereMQ), JMS, MQ Base Java, C for MQSeries, Apache Xerces Log4j, XML, Bash, Ksh, Informix. Built on Sun Solaris UNIX.
- OMNI Loaders -- Design and development of system to provide automatic loads of delta files delivered from Telcordia into a data warehouse. Utilizing Java, XML, XML Schema validation, Apache Xerces Log4j, XML, Bash, Ksh.

Keane/Metro Information Services, Kansas City 12/2000 -- 10/2001

Software Developer/Programmer, assigned to VML Marketing, Sprint group

- iSky Web Data Transition -- Design of application to encrypt sales lead data files and send them to iSky for further processing. Design of application to generate keys for encryption/decryption of said files. Involving Java, Java cryptography (JCE), Java network programming, Perl.
- ESolutions dynamic navigation application -- Design and development of system utilizing Java Servlets for creation of dynamic navigation for the ESolutions site. Design and development of browser-based application to administer said navigation. Facilitated migration of entire site to <http://www.sprintesolutions.com>. Extensive research of WebLogic and iPlanet configurations was undertaken, and used in implementation of solution. Created many migration and maintenance scripts in Perl. Created many automation scripts in Perl. Involved work with Java/Java2, Servlets, JSP, Oracle, clustered servers, JDBC, Perl, Java Cryptography, Unix, vim/vi, Ant, CVS, HTML, DHTML, CSS, XSLT, WebLogic, iPlanet.

- ECOIN Administration -- Design and programming of Java Servlets for administration of users, companies, and products for web services project. Extensive work with Oracle BLOBs. Using Servlets, JSP, NetBeans, vim/vi, JDBC with Oracle, HTML, SQL*Plus, Ant, CVS, WebLogic, Unix, Win2000.
- OBH -- Design and programming of Java Servlets and JSP to provide quick, generic, and reusable access via web service to Oracle BLOB data types. Extensive work with Oracle BLOBs. Using Servlets, JSP, HTML, NetBeans, vim/vi, JDBC with Oracle, SQL*Plus, Ant, CVS, WebLogic, Unix, Win2000.
- PPRO Seamless Login/Database Reconciliation -- Design and programming of Perl application to generate report of user ID and password synchronization between two systems. Using Perl, Unix.
- ION/DSL Prequalify -- Java Servlet programming to facilitate a qualification check for installation of ION/DSL at particular locations. Using Servlet, HTML, Oracle, SQL*Plus, NetBeans, vim/vi, Ant, CVS, WebLogic, Unix, Win2000.
- Lead forms (various) -- Web design and Java Servlet programming and XML document creation for use in wide variety of HTML sales lead forms. Using Servlets, JDBC, XML, Oracle, SQL*Plus, NetBeans, vim/vi, Ant, CVS, WebLogic, Unix, Win2000.
- SOP ALCommissioning ALBefree -- Java applications called at regular intervals to send commission data to a Sprint mainframe via FTP through a firewall. Using Java/Java2, JDBC, Oracle, SQL*Plus, NetBeans, vim/vi, Ant, CVS, Java network programming, ORO Inc. NetComponents library, WebLogic, Unix, Win2000.
- Script Database Sweep -- Design and programming of BASH script and accompanying SQL*Plus script run as a cron job to clean out specific test data. Using Oracle, SQL*Plus, NetBeans, vim/vi, CVS, Unix, Win2000.
- Purchase Pro revisions -- Java Servlet programming for password administration. Using Oracle, SQL*Plus, NetBeans, vim/vi, Ant, CVS, WebLogic, Unix, Win2000.
- Restart Script -- Perl script to safely and simply shutdown WebLogic, synchronize the distributed servers, and restart WebLogic as quickly as possible. Using Perl, Unix, WebLogic.

Maxim Group, Inc. 05/2000 -- 12/2000

Software Developer/Programmer, assigned to Sprint.

- Generic Data Extractor/Loader -- Design and programming in Java of generic, configurable, and extensible application to extract telco data from any data source within Sprint (commonly files or database tables) and load any table or file after translation. Design and programming of GUI application for configuration of said application. Using JBuilder 3.5, Visual Age for Java, Java Threads, JDBC with Oracle and Informix, Java Swing, XML DOM Parser, XML SAX Parser, UML, Rational Rose 98i, Sun Solaris 2.6, IBM AIX version 4, Windows NT 4.0, vi editor.
- CCEI -- Design and programming in Java of data consolidation application. Using JBuilder 3.5, VisualAge for Java, JDBC with Oracle and Informix, XML DOM parser, UML, vi editor.
- Wire Center Update -- Design and coding of fully configurable application in Java, required to update telco wire center data from Informix on Sun Solaris, to multiple mainframes. Using JBuilder 3.5, Java threads, JDBC with Oracle and Informix, and XML DOM parser, and UML.
- Line Range Update -- Design and coding of fully configurable application in Java, required to update line range telco data from Informix on Sun Solaris, to multiple mainframes. Using JBuilder 3.5, Java threads, JDBC with Oracle and Informix, and XML DOM parser, and UML.
- NID to FODS data loader -- Design and coding of client-side Java application, using a socket connection to a mainframe to send both message-based, and batch-based data to said mainframe. Coding of server-side application in C to launch said Java application. Using JBuilder 3.5, VisualAge for Java, Java threads, JDBC with Informix.
- HHT -- Design and coding of server side Java application and related utilities to receive message-based data from handheld units via CORBA, and to update Informix databases. Using VisualAge for Java, Java threads, JDBC with Informix, XML SAX parser.

Metro Information Services, Kansas City 11/1999 -- 05/2000

Software Developer/Programmer, assigned to RBC, Inc.

- Mallinckrodt Nellcor Puritan Bennett -- Embedded systems programming in ANSI C for pulse oximetry medical monitoring equipment. Full software development cycle (creation of Software Requirements Specification, Software Design Specification, final code, and testing) regulated by the FDA.
- SureSpec -- Full software development cycle (creation of Software Requirements Specification, Software Design Specification, final code, and testing). Headed project for customizable expert system. ASP, JavaScript, VBScript, MS SQL Server 7.0, COM and ActiveX programming with Microsoft Visual Basic 6.0, MS IIS.
- ARE, Inc.-- Full software development cycle (creation of Software Requirements Specification, Software Design Specification, final code, and testing). Project involved programming in Microsoft Visual C++ 6.0 and Visual Basic 6.0 for a custom automobile rental system.
- Firewall project -- Developed a network firewall for company use. Using ipchains.

Data Systems International 12/1996 -- 11/1999**Programmer****dcLink Core Development Team projects:**

- On production team for development of 32-bit upgrade software 'dcLINK'.
- Developed and headed code standardization team.
- Used Microsoft Visual Basic 3.0, 4.0, 5.0, 6.0, MS SQL Server, communications programming with AS/400.

Custom Development Group projects:

- NCS, Inc. Mobile Order Entry System. Creation of custom order entry system on Windows CE devices. Included use of RPG, Microsoft Visual C++ 6.0, Microsoft Visual Basic 6.0, MS SQL Server, and communications with AS/400.
- Ameriserve Advanced Warehouse Management System. Creation of custom pallet tracking system for seven+ sites. Included communications with AS/400, MS SQL Server, data manipulation, management, and distribution. On site programming for 5+ months (Multiple cities).
- Data management applications. Creation of generic and extensible data manipulation and management tools for internal use. Java, JDBC, Symantec Café.
- Configuration management applications. Creation of generic and extensible application configuration management tools for internal use. Java, JDBC, Symantec Café.
- CCL Advanced Warehouse Management System. Creation of custom pallet tracking system for seven+ sites. Included Microsoft Visual Basic 5.0, COM, communications with AS/400, MS SQL Server, data manipulation, management, and distribution. On site programming for 7+ months (Toronto and Providence)
- Richey Inc. Custom Advanced Warehouse Management System. Involved RPG, Microsoft Visual Basic 5.0, communications with HP9000 via custom coded communications interfaces, MS SQL Server, data manipulation, management, and distribution (Toronto and Los Angeles).
- Blockbuster, Inc. Custom Advanced Warehouse Management System. Included RPG, Microsoft Visual Basic 5.0, communications with AS/400 via Client Access, data manipulation, management, and distribution. On site programming for 7+ months (Dallas).
- O'Sullivan, Inc. Custom Advanced Warehouse Management and label printing system. Included Microsoft Visual Basic 3.0, communications with AS/400 via Client Access, data manipulation, management, and distribution.
- Cleo, Inc. Custom Advanced Warehouse Management and shipping system. Included RPG, Microsoft Visual Basic 4.0 and 5.0, Visual C++ 4.0, COM, communications with JDE software on AS/400, label printing, and control of conveyor systems. On-site programming for 4+ months (Memphis).

MDM Enterprises/Garfunkel Factory/Roets Empirical Data 1988 -- 1996**Partner, Systems Analyst, Systems Designer, Systems Administrator, Programmer/Analyst**

- University of Kansas - Developmental Child Psychology - Human Development and Family Life -- Consultation and programming of customizable scripting educational application in Visual C++ 6.0.
- MowDownMusic -- web design/administration/security - Design and coding of Web site with HTML, Java, JavaScript.
- Global Village Publishing -- web design/administration/security - design and programming of custom company information Internet site.
- Fresh Sounds Inc. -- web design/administration/security - Consultation and programming of company mail order catalog Internet site.
- Micronotz -- web design/administration/security - Consultation and programming of general information Internet site.
- Replay Lounge -- Consultation and software development of custom inventory system.
- Atrox -- web design/administration - Consultation, design, programming, and promotion of general company information and 2 mirror sites on the Internet.
- MDM/Garfunkel -- web design/administration/security - Programming for Internet/Intranet connection between two sister companies for document and project materials transfer between the two physical sites.
- MDM Enterprises -- Data Manipulation, Recording, Cataloging, and Communications.
- Garfunkel Factory -- Marketing consultation (conventional and Internet), programming, and promotion of general and custom design work.
- ESOUT -- Theorem for media and marketing. Its proof, and development of its use.
- Conception, development, and use of three level print separation process for low cost, high quality printing onto dark stocks and materials.