JIM LADD

Providing Software Construction and Renovation Solutions

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PROFESSIONAL SKILLSET

- ✓ Java, Python, C#, C++, C, and PL/SQL
- ✓ Windows, Linux, Solaris, iRMx, Vrtx
- ✓ DynamoDB, Snowflake, SQL Server
- ✓ Certified ScrumMaster
- ✓ AWS Certified Machine Learning
- ✓ AWS Certified Big Data
- ✓ AWS Certified Solutions Architect
- ✓ AWS Certified Developer
- ✓ Enterprise Application Integration (EAI)
- ✓ Drools, Genetic Algorithms
- ✓ AWS Serverless Technologies
- ✓ IT Project Management
- ✓ TelComm, Finance, and Health Industries
- ✓ Apparel and Manufacturing Markets
- ✓ Agile Development
- ✓ Consulting Engagement Management
- ✓ Business Process Management (BPM)
- ✓ Process Automation
- ✓ Messaging Systems, Service Buses
- ✓ Real-time Scheduling Algorithms
- ✓ Internet of Things (IoT)
- ✓ Microservices / RESTful services

CAREER HIGHLIGHTS

- Founded and managed niche software consulting firm for 24 years.
- Provided leadership, development, and maintenance of programs valued as high as $1.1B.
- Enterprise architect for an IoT-based air quality monitoring startup using AWS serverless services.
- Key leader and architect of robust software for GSA-sponsored Networx and Wits3 programs.
- Developed disruptive automation software for the nation's leading grand format printing firm.
- Pioneered the application of real-time scheduling algorithms for medical diagnostic equipment.
- Created real-time control software for the first self-sufficient, autonomous vehicle (NavLab).

LEADERSHIP EXPERIENCE

CEO / Principal Consultant
Wazee Group, Inc. **October 2000 – Current**
Founded Wazee Group in 2000 to provide IT professional services with integrity, respect, and high value. Led multiple successful engagements across several industries, a wide spectrum of business challenges, and diverse technologies. Achieved and maintained profitability since day one.

As CEO, oversaw the operation of the business including strategic planning, sales, proposal generation, and contract negotiation. Also responsible for professional and worker compensation insurance policy and vendor selections, unemployment insurance reporting, state and federal tax reporting.

As Principal Consultant, responsible for all client engagements and contract executions. Successfully lead numerous client projects and guided the development of four commercial software products. Also contributed to a significant open source project.

Senior Software Architect / Manager
SOFWERX **August 2019 – August 2021**
Lead the Software Engineering / Systems Administration Group for a non-profit organization chartered with bringing rapid and cost effective innovation to the US Special Operations Command. Provide software architecture, design, and development consultation on various projects. Developed a Zero Trust Network proof of concept using the Drools rules engine, XGBoost machine learning framework, NGINX web server, Docker, and AWS.

Chief Architect / Project Manager
BoldTech Systems **October 1999 – October 2000**
Led multiple successful engagements in the telecommunications, satellite broadcast, and retail commerce industries.

Chief Architect / Project Manager
Level 3 Communications **October 1998 – October 1999**
Led the Network Inventory Distribution project which was the real time integration between the network inventory tracking package and the circuit and facilities provisioning tool.

Independent Consultant
VF Corporation **January 1997 – October 1998**
Object technologies consultant for the Retail Floor Space Management project that defined and automated major steps of a forecasting and planning system. It represented the primary competitive advantage for a global apparel manufacturer ($5B sales) with expected annual revenue enhancements of $150M+.

Chief Architect / Business Analyst
IBM Integrated Systems Solution Corporation **March 1995 – January 1997**
Chief Application Architect for the Convergent Billing System, a $75M billing system designed to reduce time for new product introduction from 12 months to nine weeks and consolidate legacy processing.

Lead Architect / Manager
Abbott Laboratories **October 1988 – March 1995**
Led the Object Technology Group that was a software research and development department for the diagnostics division ($2B sales) of a global healthcare corporation. The group specialized in emerging technologies including process definition, testing strategies, analysis model simulations, and framework development.

Research Engineer
Carnegie-Mellon University **September 1986 – October 1988**
Project work included software and hardware architecture design, system configuration, and application programming for autonomous navigation vehicles.

EDUCATION

Carnegie-Mellon University: *Master in Manufacturing Engineering*

University of Texas, Austin: *B.S. in Mechanical Engineering*

PATENTS

US Patent #8,047,759 - Manual Forklift Apparatus and Methods

Issued on November 1, 2011

TRAINING & CERTIFICATIONS

AWS Certified Machine Learning - Specialty, July 2019

AWS Certified Big Data - Specialty, September 2018

Certified ScrumMaster – Scrum Alliance, August 2018

AWS Certified Developer – Associate, August 2018

AWS Certified Solutions Architect – Associate, July 2018

BEA WebLogic Developer's Certification, July 2001

webMethods Certified B2B Developer, June 2001

webMethods Certified Enterprise Developer, June 2001

Sun Microsystems Certified Programmer for Java 2 Platform, June 2001

PUBLICATIONS

These publications and whitepapers are available via my GitHub Pages site at https://jladd413.github.io/.

Business Process Optimization Domain Analysis
Wazee Group Whitepaper *May 2022*
The paper presents Business Process Optimization (BPO) as the next phase in the evolution of process automation technologies. A definition is presented along with a domain analysis that provides a path forward in the realm of process automation.

Accelerators for Web API Integration Development
SOFWERX Whitepaper *August 2021*
We present a set of recommendations with the goal of accelerating the development of integrations with web-based interfaces. These accelerators were constructed over decades of system integration experience and recently re-validated on a real-world project. While the focus of this effort was on integration development, most of the accelerators can be applied on other types of software development.

AWS Serverless Patterns – S3
SOFWERX Whitepaper *July 2021*
While the solution space for software development is constantly updated with new technologies, the requirements and artifacts of the problem space can appear to be timeless. Even with cutting edge technologies like the AWS serverless stack, software developers are still burden with vintage entities like document and image files. The patterns presented in this paper cover uploading documents to a private S3 bucket by multiple users, allowing read access to a subset of the user population, and manipulating the documents in a serverless realm.

CAC in the Cloud
SOFWERX Whitepaper *July 2021*
The Common Access Card (CAC) is a "smart" card and provides standard identification for active and reserve military personnel, Department of Defense civilian employees, and eligible contractors. The paper describes three cloud-based architectures that were developed to integrate the CAC in the security service of a web application. The first two versions relied on NGINX, Docker, and AWS Elastic Container Service (ECS). The latest version is based on AWS serverless stack including API Gateway, Lambda, and S3. All of the versions used GitLab and its CI/CD pipeline service.

Heterogeneous Architecture for the Physiological Analysis Tool
SOFWERX Whitepaper *May 2021*
The Physiological Analysis Tool (PAT) was a recent proof-of-concept project at SOFWERX that explored the limits of hosting multiple physiological and sentiment analysis systems on an on-body computing

platform. Five different sentiment-based systems along with three physiological measurement tools were incorporated into a system that can concurrently analyze the same event. To accommodate this wide spectrum of technologies, a heterogeneous platform was developed that integrates Android, Ubuntu, and Windows computing environments with two point-to-point cable-based connections.

Fast Path to AWS Serverless Applications
SOFWERX Whitepaper *May 2021*
This project presents a serverless implementation of a notes management application. We started with the example from the Serverless Stack guide and evolved it to fit our requirements. The client project uses Nodejs, React, Amplify, and CloudFront while the service project utilizes Cognito, API Gateway, Lambda, DynamoDB, and Python. The two projects are maintained in GitLab and uses its CI/CD pipeline feature. This project deviated from the Serverless Stack guide in the use of GitLab instead of GitHub and Python instead of Nodejs for the Lambda language.

React and Flask Stacks for Docker on the Raspberry Pi
SOFWERX Whitepaper *January 2021*
The Clockwerx project started with the desire to program a set of wall mounted clocks via a web application. This document presents an overview of the architecture that includes a React stack for the web application and a Flask stack for the web service. These services are embedded in Docker containers and hosted on a Raspberry Pi. Several tips and details for building out a similar system are described.

First Steps Toward CI/CD with WordPress, SiteGround, and GitHub
SOFWERX Whitepaper *December 2020*
This paper describes our initial steps toward a CI/CD pipeline for our client facing websites that use WordPress and SiteGround. We incorporate GitHub's repository to maintain our source code while using GitHub's Actions service to automate the deployment to a staging environment hosted by SiteGround.

Infrared Transmit Validation for the Raspberry Pi
SOFWERX Whitepaper *August 2020*
A project at SOFWERX relied on IR to remotely control a target device. In theory, the approach was attractive but, in practice, it was unreliable. This paper describes an approach to increase the stability of this type of computer interface by validating the IR signal transmission.

ATAK Low Latency Camera Platform (ALLCaP)
SOFWERX Whitepaper *July 2020*
The ATAK Low Latency Camera Platform (ALLCaP) is a proof of concept that provides near real-time video display. The viewing device is an ATAK enabled tablet or phone while the video source is a USB-based camera or another ATAK enabled device.

Integrating Finite State Models with React and Redux
SOFWERX Whitepaper *June 2020*
This paper presents how Finite State Models (FSM) can be utilized to increase the knowledge and specification of the problem domain and drive the design of React/Redux-based software in the solution domain.

Building a Zero Trust Network with Open Source and Community Version Software
SOFWERX Whitepaper *May 2020*
Zero Trust Networks (ZTN) represent a new wave of network security technology. The mantra with this approach is "Never trust, always verify". This paper describes a Zero Trust Network implementation constructed using a Service Oriented Architecture (SOA) with Drools, XGBoost, NGINX, Mender, and WSO2 hosted on AWS EC2 instances.

Taking the Pi for a Walk Through the AWS Greengrass
Wazee Group Whitepaper *June 2019*
This is a consolidated step-by-step guide that configures a blank Raspberry Pi to send a message to a service within the AWS cloud in a secure, reliable, and widely acceptable fashion.

Light Detection Circuit for a 650nm Laser Diode
Wazee Group Whitepaper *March 2019*
This paper presents a circuit for detecting a light source and the interruption of that light source. Visual indication of the light source is provided by a LED. The circuit also signifies when the light source is interrupted by illuminating a different LED for a few seconds before resetting.

A Modeling Approach for AWS DynamoDB
Wazee Group Whitepaper *December 2018*
This paper presents a straightforward and consistent set of rules for creating DynamoDB tables. A sample problem is described along with the logical view of the data. A set of design rules are presented that map the logical view into a physical table.

Real World BPM Patterns
Wazee Group Whitepaper *November 2018*
This paper presents several business process management (BPM) model patterns that were identified and leveraged during client engagements. The objective of this document is to assist someone new to BPM modeling to realize the same benefits that my clients did without the same learning curve.

Evaluating "Team of Teams" Concepts for Large Scale Software Development
Wazee Group Whitepaper *October 2018*
This document examines the concepts presented in the "Team of Teams" book by General Stanley McChrystal and evaluates them for large scale software development. In 2003, General McChrystal took command of the Joint Special Operations Task Force. At that time, the Task Force was a hierarchical, highly disciplined organization of thousands of men and women. To defeat Al Qaeda in Iraq, the Task Force leadership had to transform this command and control structure based on decades of refinement and principles to an agile, responsive, and adaptable network, a Team of Teams.

Putting Physhun to Work
The Server Side *August 2008*
Monitoring simple transaction processes is easy, but monitoring complex processes is difficult. When the complex process spans multiple Commercial-Off The-Shelf (COTS) systems that provide little support for interoperability, the monitoring tasks becomes very, very difficult. This paper describes how the XML Transaction Monitor (XTM) project faced challenges related to inter-system transaction monitoring, and how the Physhun framework proved an integral component in the overall solution.

Implementing Finite State Machines with Physhun and Spring
The Server Side *July 2008*
Processes involving multiple steps that require decision points within and outside of each step can be inordinately complex to program. But this type of process modeling has long-established solutions in computing. This article presents the Physhun project, a Spring-based framework for implementing complex processes through Finite State Machine models. Physhun provides finite State Model persistence and transaction management with synchronous or asynchronous behavior.

Boldly Automating Where No Automation Has Gone Before
Industry Week *April 2008*
This paper presents the unique way Wazee Group automated the processing of grand format printers and dramatically raised the throughput of the nation's leading billboard printer.

Developing a medical diagnostic system with OOA/RD
Object Magazine *November 1994*
This paper presents a view that software development should shift to object-oriented programming (OOP), object-oriented analysis (OOA), and Recursive Design (RD).

Locomotion Emulator: A Robot Testbed for Navigation Research
CMU Field Robotics Center *July 1988*
The Locomotion Emulator (LE) is a mobile robot testbed that overcomes limitations of previous testbeds. The LE consists of a locomotor, a mechanism capable of completely general locomotion on a surface, and an emulator, a software environment that specializes this mechanism to mimic the characteristics of different vehicles. The LE's general locomotion can subtend all the trajectories important to navigational research. This paper discusses the need for such a vehicle and describes the LE mechanism and software.

Carnegie Mellon Leads in Real-Time Robots
Intel Innovator *March 1988*
The Field Robotics Center (FRC) at Carnegie-Mellon University develops mobile, perceptive, forceful robots for duty in unpredictable environments such as unstructured work sites and natural terrain. This paper presents an overview of those robots.

NAVLAB: An Autonomous Navigation Testbed
CMU Robotics Institute *November 1987*
The NavLab is a testbed for research in outdoor navigation, image understanding, and the role of human interaction with intelligent systems; it accommodates researchers and all computing onboard. The core of the NavLab is the vehicle controller, a multi-processor computer that controls all locomotion, actuation and physical sensing; it interacts with a computer host and human operator to implement varying degrees of autonomy. The chassis is a modified van with a computer-controllable, hydraulic drivetrain. The NavLab supports a choice of sensing to accommodate many types of navigation research. This technical report details the control computing and physical configuration of the NavLab vehicle.

PRODUCTS & PROJECTS

Eight Softball and Baseball Training Devices **March 2018**
Over the span of eight years while my kids pursued their dreams of playing baseball and softball at the collegiate level, I developed a few unique training devices to improve their skills. Some of the devices where electromechanical, others were purely mechanical, and all were fun to design and build.

Body Imaging **May 2006**
This project is used for constructing quick, low cost digital measurements of human bodies. The objective is for customers to create detailed 2D & 3D measurements of their bodies to be used for custom apparel fabrication, determining the "best fit" of existing apparel offerings, and other uses in the apparel industry. This technology may also be applied in other industries including the fitness and medical domains.

Rebate Forecasting and Management **March 2006**
Companies that purchase large amounts of goods/services to provide their products/services often received rebates from their vendors. With the recent changes in government regulations forcing public companies toward increased transparency, these rebates must be estimated, tracked, and reported in the financial disclosures. Wazee Group has developed a solution for the construction industry to greatly increase the accuracy of their rebate forecasting process.

Physhun Finite State Machine Framework **November 2005**
The Physhun framework was originally written by Wazee Group, and was released as an open source project in November of 2005. Wazee Group remains active in the development of the Physhun framework, as well as add-ons to Physhun like the Physhun XML package. Additionally, Wazee Group offers Physhun Modeler, a graphical editor for Physhun state models, free of charge to users of Physhun.

WinApp Navigator™ **March 2005**
Almost every corporation deploys Microsoft Windows® applications in their enterprise. As stand-alone entities, these applications are largely very successful. A major problem emerges when these applications lack an application programming interface (API) which greatly reduces the opportunity for process automation and enterprise application integration (EAI). To address this challenge, Wazee Group has developed the WinApp Navigator™ which allows an XML-based interface to be easily developed for any application. With this tool, any Microsoft Windows® application can be accessed via an Xml interface and, with little time and effort, turned into a web service.

xBroker™ **February 2002**
In early 2002, a client approached Wazee Group with a need to replace its "work-in-progress" EAI solution. The system under development was going to be expensive to scale and knowledgeable, skilled developers were scarce. The client had several end user applications and numerous back end systems that required integration with a high level of process automation. Wazee Group decided that a web services architecture was the best solution for the client and quickly developed and deployed the xBroker™ platform. The xBroker™ server not only validated the web services approach but wildly exceeded the client's expectations.

PROJECT HISTORY

Senior Software Architect / IT Manager
SOFWERX **August 2019 – Current**
Provided software architecture, design, and development consultation on various projects. Mentored several interns and colleagues on software development practices and technologies. Developed Agile based development process for public websites. Please refer to the ***Publications*** section for whitepapers on relevant projects.

Wazee Group Consultant
Ajax Analytics **November 2018 – April 2019**
Enterprise architect for an IoT-based air quality monitoring platform using AWS serverless technologies such as DynamoDB, Lambda, AppSync, SQS, Kinesis Firehose, S3, Batch, CloudFormation, and CodePipeline. The startup company became profitable with its first contract.

Wazee Group Consultant
Otterbox **April 2018 – August 2018**
Lead the migration effort of Infor Process Automation (IPA) solution from version 10 to version 11. This included modifying the installation software to support a stand-alone server, migrating the BPM data, creating custom activity nodes for the process models, and developing JScript code for integrating with the Infor Smart Office application.

Wazee Group Consultant
KPA **February 2017 – February 2018**
Performed the analysis, design, and construction of the Canonical Data Model (CDM) database which provides a common, application independent repository of the client's enterprise business data. Data from two financial systems were extracted and consolidated into a robust data model that covers the client structure, contract, sales order, product catalog, invoicing/payment domains. The solution included

custom software to extract the data from the Intacct financial system, transform the information and update the CDM database. The database represents the cornerstone of the client's enterprise integration and business intelligence strategies.

Created a Java-based interface to the Intacct financial system that is used by multiple applications. Developed the schema to represent the response structures from the Intacct Web Services API. Utilized a record/playback framework of the web service interface in the automated integration testing.

Performed an evaluation of several offerings for an enterprise integration platform. Products from Mulesoft, Jitterbit, Dell, Snaplogic, Talend, Red Hat, and Workato were evaluated with custom, proof of concept projects.

Wazee Group Consultant
Integrated Architectures, Inc. **November 2016 – December 2016**
Created the continuous integration and testing platform for the Communications Dimension of the Agile Fractal Grid program. Developed the initial version of the components including Java-based simulation software for the Home Gateway, Small Cell eNodeB, Substation HetNet Gateway, and Utility Pod entities with the Docker container technology in both AWS and Azure environments. Constructed the communications between the simulation entities with the RTI Data Distribution Service messaging framework.

Wazee Group Consultant
Otterbox **January 2013 – August 2016**
Lead the development of the client's BPMs solutions with the Infor Process Automation product. Created 5 archetypes models that were used for all automated processes. Developed a 52-page step-by-step guide for the installation of IPA 10x and the migration of data from LPA 9x. Created custom activity nodes for the process designer editor.

Contributed to the development of the Restful and micro-services integrations surrounding Infor's M3 ERP system. Developed integrations with FedEx, CyberSource, PayPal, and cold seal packaging machines. Followed the Agile process using Rally with Continuous Integration / Continuous Deployment practices using Jenkins, Maven, JUnit, and SonarQube.

Wazee Group Consultant
OppenheimerFunds **July 2015 – June 2016**
Renovated the client's 15-year-old Compliance Filing System (CFS) with enhanced functionality, improved user interactions, and expanded reporting. Added the ability to generate the 13F filing documents for the SEC EDGAR system. Migrated the system from the WebSphere platform to the Tomcat server. Followed the Agile process using JIRA.

Wazee Group Consultant
Brown Brothers Harriman **August 2011 – December 2012**
Lead the development of the integration between the client's new collateral management system, Lombard Colline, and their existing systems. The solution involved MQ and Restful Services technologies on a WebSphere platform.

Wazee Group Consultant
National Value Assurance, LLC. **July 2010 – January 2012**
Responsible for the design and development of the corporate website which allowed users to learn about NVA's unique financial services, create and manage an account, and interact with NVA's proprietary National Value Index engine. The user could also view informational videos, review news releases and upcoming events. The solution was built using Flex, JBoss, Restful services, and MySQL.

Wazee Group Consultant
Level 3 Communications **January 2010 – July 2011**
Responsible for the maintenance and support of the Networx and WITS 3 order management systems. Enhancements included the offering of several new products and services and improved loading of pricing information. Reduced the effort required for new product availability to 8 staff hours of development time and testing.

Wazee Group Consultant
OppenheimerFunds **April 2009 – December 2009**
Lead the development of the integration between the client's new collateral management system, Omgeo Protocoll, and their existing systems. The solution involved JMS, EJB, and Web Services technologies.

Wazee Group Consultant
Level 3 Communications **January 2009 – March 2009**
Responsible for the maintenance and support of the WITS 3 project. This system provides a portal for government users to enter and management orders for the GSA Washington Interagency Telecommunications System program. This program is valued at $1.8 billion over a ten-year period. The software platform utilized BEA's Weblogic servers and Oracle databases.

Wazee Group Consultant
OppenheimerFunds **August 2008 – December 2008**
Assisted with the architecture, design, and development of the Fund Expense project. This system is a web-based application that extends the capabilities of the client's mainframe accounting system. The software platform utilized Java EE, Struts 2, BEA's Weblogic servers and Oracle databases.

Wazee Group Consultant
Moosoobee **May 2008 – July 2008**
Developed web site for startup software product company. Customers may download, purchase, and register products via the application. This system was rapidly developed using Grails and MySQL and interfaces with PayPal webservices.

Inventor
Wazee Group **January 2008 – April 2008**
Developed proof of concepts and patent applications for three inventions. The two software inventions involved email security and digital imaging technologies. The one mechanical invention consists of a new forklift design. The patent for the forklift (US Patent #: 8,047,759) was issued on November 1, 2011.

Wazee Group Consultant
Level 3 Communications **July 2007 – December 2007**
Responsible for the architecture, design, delivery, and support of the Networx project. This system provides a portal for government users to enter and management orders for the GSA Networx Enterprise program. This program is valued at $850 million over a ten year period. The software platform utilized BEA's Weblogic servers and Oracle databases. All requirements were met on or ahead of schedule and under budget.

Wazee Group Consultant
Encore Capital Group **February 2007 – June 2007**
Responsible for the architecture, design, delivery, and support of the Arbitration project. This system manages the lifecycle processes of the arbitration sector. This project represented the client's first experience with BPM. The software platform utilized the Savvion SBM product on Pramati J2EE servers. All requirements were met on schedule and under budget.

Wazee Group Consultant
Sun Microsystems **May 2006 – January 2007**
Responsible for the architecture, design, delivery, and support of the Project Lifecycle project. This system manages the lifecycle processes of traditional and non-traditional offerings of hardware, software, and services. The software platform utilized the Savvion SBM product on Pramati J2EE servers.

Managed and contributed to the development of the second major phase of the Savvion SBM projects. The effort consisted of six developers for a duration of three months. All requirements were met on schedule and under budget.

Wazee Group Consultant
Wild Blue Communications **September 2005 – April 2006**
Responsible for the architecture, design, delivery, and support of an XML monitoring system. This system monitors the XML transactions between multiple systems. Alarms and warnings are raised when transactions fail or fall outside performance envelopes. System allows users to correct failed XML transactions and resubmit to the target systems.

Wazee Group Consultant
Circle Graphics **December 2004 – August 2005**
Responsible for the architecture, design, delivery, and support of various printing- and manufacturing-related projects. Designed and developed software to acquire, analyze, and control several types of grand format printers and custom manufacturing machines.

Without the advantage of application programming interfaces (APIs), a software solution was constructed with the WinApp Navigator product that automates the human tasks involved with grand format printer configuration and monitoring. The solution drastically increased the throughput and efficiency of the printing factory.

Wazee Group Consultant
Comcast/AT&T Broadband **October 2000 – November 2004**
Responsible for architecture, design, delivery, and support for an enterprise system integration project. eSTAR integrates Cold Fusion and web-based systems on the front end with legacy billing and third-party provisioning systems on the back end. The layered architecture processes XML transactions through HTTP, Enterprise Java Beans, and socket-level adapters on the front end; and terminal access, HTML, secure copy, and s-tunnel secure protocols on the back end; and provides an infinitely scalable architecture.

Developed a Drools-based product catalog and pricing engine that allows the configuration of voice, data, and cable products into custom packages.

Developed a system that transports and manages Automatic Location Identification (ALI) information. The system automates the 1) extraction of the ALI data from the billing system, 2) validation of the data against the MSAG database, 3) generation of the NENA 2 files, and 4) transportation to the 911 Service Providers.

BoldTech Systems Consultant
EchoStar Communications (Dish Network) **August 2000 – October 2000**
The Internet Sales System provided the client's first sales offering via the Internet. It allowed customers to view product offerings and promotions, select products, enter payment information, and schedule installation. The architecture integrated the front end (WebLogic Server) system with existing Inventory, Billing, Order Entry, Network Qualification, and Marketing systems. The technologies included ActiveWorks, webMethods, Java, Enterprise JavaBeans, CORBA, Red Oak's Stringray (terminal access), and Oracle.

BoldTech Systems Consultant
Found.com **October 1999 – August 2000**
The project gave retailers and manufacturers a powerful Internet tool to rapidly and cost-effectively allow their customers to source, find and purchase products online or offline from their regional distribution centers or local retail stores. The In-Store Order Processing System performs all of the order processing within the retailer's store. The architecture is based on Java, ActiveWorks, Remote Method Invocation, Java Native Interface, JavaServer Pages, Cloudscape/Informix; and Solaris, Linux, Windows NT.

Chief Architect and Project Manager
Level 3 Communications **October 1998 – October 1999**
The Network Inventory Distribution project was the real-time integration between the network inventory tracking package and the circuit and facilities provisioning tool. The architecture was based on Vitria, CORBA, and Java and was deployed on NT and Solaris platforms.

Independent Consultant
VF Corp **January, 1997 – October, 1998**
The project defined and automated major steps of a forecasting and planning system. It represented the primary competitive advantage for a global apparel manufacturer ($5B sales) with expected annual revenue enhancements of $150M+. The project integrated legacy systems, industry-specific packages, and new custom software. Distributed object technologies provided the binding in an advanced three-tier heterogeneous architecture

IBM Consultant
MCI **October, 1995 – December, 1996**
The Convergent Billing System was a $75M billing system, designed to reduce time for new product introduction from 12 months to nine weeks and consolidate legacy processing. System utilized a rule-based, object-oriented design with three-tier (3500 clients) architecture. Development followed an incremental, iterative process with concurrent requirement analysis and business rule mining.

IBM Consultant
Lee Jeans **March, 1995 – October, 1995**
The Sales Planning System was a revolutionary sales planning project within the apparel industry and the company's first endeavor with the distributed object technology. Architecture relied on a highly asynchronous, three-tier architecture based on distributed objects.

Lead Architect and Manager
Abbott Laboratories **November, 1992 – March, 1995**
The Object Technology Group was a software research and development department for the diagnostics division ($2B sales) of a global healthcare corporation. The group specialized in emerging technologies including process definition, testing strategies, analysis model simulations, and framework development. Responsibilities included:

- Strategic planning for Division R&D; planning, administration, and execution of the Object Technology program.
- Directing department goals and objectives; supervising and developing staff; managing budget, schedules, and resources; providing process appraisals on internal and external software organizations.
- Obtaining funding and managing a multi-year program integrating multi-paradigm simulation technologies and the use of simulations in software and system testing.

Software Manager
Abbott Laboratories **October, 1988 - November, 1992**

Various projects to automate and improve laboratory testing processes, including a tissue typing instrument to assist the organ transplants process and several types of automated blood analyzers. Responsibilities included:

- Product conceptualization and definition, developing and approving customer software requirements; sizing and scheduling estimations.
- Interviewing, hiring, and mentoring staff; and supervising contractors and consultants.
- Defining development process and ensuring software compliance with FDA regulations.
- Researching and developing image processing algorithms for auto-focusing and pattern detection and classification.

Research Engineer
Carnegie-Mellon University **September, 1986 – October, 1988**

Project work included software and hardware architecture design, system configuration, and application programming for autonomous navigation vehicles. Responsibilities included:

- Designing and construction of real-time controllers for three robots based on Intel's processors, real-time operating system, and programming language.
- Leadership of the Real-Time Computing Group at Field Robotics Center.
- Assisting with generation of project proposals in response to government and civilian Request for Proposals.