

# Jacob Robertson

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Eighteen years professional experience in  
**Software Architecture, Technical Leadership,**  
**Dev/Ops Architecture, Software Security and Software Development.**

## Overview

### Software Architecture

- Develops architecture solutions by analyzing existing systems and processes, working with technical and business teams, and determining prioritization and recommended phases
- Aligns architecture solutions with IT management's strategic goals, and collaborates with enterprise architecture teams
- Delivers architecture solutions through architecture diagrams and documents, and baseline implementations
- Communicates effectively to IT and business management through roadmaps, scope/phase planning, vision, and executive summary documents

### Technical Leadership

- Communicates effectively to IT development teams, for example through architectural decisions, technology directives, and technical design documents
- Major contributor to training programs, educational materials, and live presentations for development teams
- Developed the vision and processes to rollout multiple technology initiatives across whole organizations
- Proficient with all SDLC functions and artifacts such as requirements, use cases, sequence diagrams
- Experienced with project planning and being Scrum Master, including task prioritization and assignments
- Developed multiple common frameworks, reference frameworks, and process improvements
- Mentored many architects and developers

### Dev/Ops Architecture

- Architect and Technical Lead of JBoss Migration, including automated deployment capabilities
- Technical Team Lead responsible for defining, implementing and rolling out a new continuous integration process across an organization, including a complete Maven, Nexus and Jenkins stack

### Software Security

- Created the architecture, patterns and initial implementation of a security framework to access pre-existing security capabilities through Spring Security APIs
- Developed toolsets to integrate Rational AppScan Source Edition into continuous integration, including authoring Maven and Jenkins plugins
- Authored a highly-rated 4 hour online training course for Application Security, to be taken by all FSA developers
- Co-presented at IBM Rational Innovate 2012 - Security Scanning with Continuous Integration
- Charter member of the Software Security Group at FSA to continually improve security scanning capabilities
- Performed Build Security In Maturity Model (BSIMM) analysis and alignment
- Analyzed the security of a legacy application, discovered serious security flaws, and designed and built a lightweight security framework that could be easily adopted within the existing code base

## Software Development / Technical Background

### Certifications

- Oracle Certified Master, Java Enterprise Architect (OCMJEA) (12/8/2016)
- GIAC Certified GSSP/Java Professional (GIAC Secure Software Programmer, 2/4/2011)
- Agile Methodology, Certified Scrum Master (12/18/2009)
- Sun Certified Java Developer (9/30/2003), Sun Certified Java Programmer (3/21/2001)

### Open Source Software Contributor

- Jenkins/Hudson - contributor to core, author/maintainer of 3 popular plugins (view-job-filters, compact-columns, configuration-slicing)
- Next Generation Testing (TestNG) - contributed examples to the published TestNG book
- Contributor to Maven, DbUnit, Hibernate

### Development Technologies

- **Web** - Spring MVC, Struts, Tapestry, JSP, Servlets, AJAX, JavaScript, JSON, HTML, CSS
- **Services** - Web Services (XFire/CXF, Axis, SOAP, WS Security, JAX-WS), JMS/MDB, EJB2, EJB3
- **Data Access** - Spring JDBC, Hibernate, JDBC, SQL, HSQLDB, Derby
- **Testing** - Junit, TestNG, DbUnit, Easy Mock, Mockito
- **Continuous Integration** - Maven, Jenkins/Hudson, Nexus, Cobertura, Emma

## EXPERIENCE

### Security Specialist Solutions Architect, USDA/FSA DFAD, VSolvit, LLC

Kansas City, Missouri — 2015-Present

Contracting as the Senior Solutions Architect on the DFAD contract, I engaged with other Solutions Architects to analyze and implement common architecture and security strategies for JEE apps within the Administrative and Financial Applications Office. As Solutions Architect over applications such as the National Receipt and Receivables System (NRRS), Financial Inquiries, and the Accounting Transactions Control System (ATCS), I performed in critical roles including the following highlights

- A primary contributor to the AFAO Cloud Readiness Vision document, including a roadmap for increasing the adoption of service oriented architectures, and reduction of dependencies on mainframe technologies.
- Analyzed the security of NRRS, discovered serious security flaws, and designed and built a lightweight security framework that could be easily adopted within the existing code base.
- Created the technical design, plans, and prototypes to migrate NRRS from EJB2/singleton technology to EJB3/Spring-Framework technology.
- Authored and executed a plan to dramatically reduce the number of Data Change Requests being performed directly against the NRRS database. This led to increased integrity of financial data, and provided a springboard to perform numerous root cause analyses on why bad financial data was entering the system, followed up by bug fixes and enhancements to remediate these issues.
- Authored the vision document, phase planning, executive summaries and technical design documents for ATCS. Developed the initial frameworks and baseline implementation skeleton for the application. Led the development team for architectural and technical concerns, including creating the task breakdown for

assignments.

- Architect and Technical Lead responsible for delivering a rewrite of the Financial Inquiries application, including coordinating new requirements and improved security.

### **Lead Software Architect, USDA/FSA Architecture Office**

Kansas City, Missouri — Sept 2008 - Sept 2015

Contractor with **n-Link** — Sept 2008 - Sept 2010

Contractor with **SAIC** — Sept 2010 - Apr 2015

Contracting as the lead applications architect of the Architecture Office (AO), I was team lead over multiple teams. I provided vision, mentoring and technical leadership, and I worked hard to facilitate each team's success. The following are some of the highlights.

#### **Lead Applications Architect — 2008-2015**

In this role, I put in place common practices across the Architecture Office's contracting teams, and promoted a vision for all contractors with J2EE expertise to get involved in developing common solutions and recommendations to benefit the Application Development Center. These are some of the major accomplishments:

- Developed the Example Web reference project and the Example Shared Services reference project.
- Established the Architecture Office Backlog to help prioritize and track the successful development of common frameworks.
- Primary contributor and champion of the Wiki. This collaboration tool has proven invaluable in disseminating a large amount of information regarding tools and best practices that the AO has developed.
- Established a vision for the AO to successfully roll out technology initiatives such as Ounce Security Analysis, Common Web frameworks, WAS Automated Deployments, improved Eclipse/Maven integration, and Quality Reporting framework.
- Authored major portions of multiple "Information Bulletins", and developed a Common Web Diagnostic solution that allowed development teams to quickly comply with that particular bulletin.
- Presented to over 100 FSA contractors and developers, introducing the Automated Build and Test tools and processes.

#### **Architect and Technical Lead, JBoss Migration — 2013-2015**

- Performed project management responsibilities such as planning phases and work tickets
- Architected and delivered automated provisioning tools using Jenkins, Maven, Java and Shell scripts
- Collaborated with other IT organizations to facilitate migration from WebSphere to JBoss (e.g. batch scheduling, security, infrastructure providers)

#### **Program Management — 2011-2012**

- Managed a \$24 million dollar contract consisting of 20 people
- Performed all interviewing and hiring
- Reviewed and performed quality control on invoices
- Worked directly with government contracting officers to execute the contract
- Worked with subcontractor companies
- Managed all personnel on the contract including performance goals and reviews

### **Software Security Architect — 2013-2015**

- (See overview section at top)

### **Team Lead, Automated Build and Test Team — 2008-2015**

This team started out with two Senior Architects, and I worked with the AO to matrix on other contractors, and to make automated builds part of every AO contractor's skill set. As team lead, I not only provided vision and leadership, I involved myself in every major technical decision and implementation, ensuring that the team succeeded. The following highlights are things for which I was the primary leader and contributor.

- Defined the team vision.
- Evaluated build technologies, including Maven and Ant.
- Provided a plan to roll out major initiatives within each contracting year.
- Defined the processes for making progress and measuring success for each build implementation.
- Evaluated where significant efforts were needed for major improvements to our own toolset recommendation, and provided a plan of action with milestones to successfully roll out those changes.
- Met personally with development teams, project managers, and group chiefs to provide direction, resolve concerns, and build working relationships.
- Communicated the build processes and toolsets to the organization.
- Provided direction and review for a remote contracting company.
- Provided technical direction, J2EE expertise, and mentoring to the team.
- Implemented technical solutions for complex build problems, including writing Maven Plugins.

### **Team Lead and Senior Architect, Engagement Architecture Team — 2008-2015**

This team consists of Engagement Architects who are embedded on development teams, and take on a high level of accountability and responsibility within those teams. As team lead, I have provided leadership to Architects and Senior Architects who rely on my decision-making, mentoring, and conflict resolution skills. The following are highlights of my contributions to that team.

- Defined the vision of the engagement model.
- Mentored Engagement Architects in the FSA SDLC, Reference Architecture, and J2EE topics.
- Mentored these Architects in improving their communication skills, especially in helping them learn to navigate very challenging team situations.
- Ensured that each Engagement had milestones and deliverables, and that we could report our successes to upper management.

### **Team Lead, Application Availability and Performance Lab — 2010-2011**

- As the Team Lead of these Performance Architects, my primary task has been to provide a vision for success, and to begin enacting that vision.
- My strategy rested on two main points
  - Re-defining the team vision in terms of the Architecture and Management Center's strategic goals, and how we could measure our progress in accomplishing those goals. This included defining the activities the team and government oversight felt would best support that measurable progress.
  - Managing the team's activities through the proven processes that I had put in place for other teams. This included using Architectural Engagements, Technology Initiatives with Milestones,

Technology Implementation Checklists, and integrating with the Architecture Office Backlog.

## **Senior Software Developer/Architect, Argus Health Systems, Inc.**

Kansas City, Missouri — Dec 2001 - Sept 2008

Played a key role in architecture, design and implementation of multiple projects, including the following highlights.

### **Development Supervisor and Technical Lead, Argus Re-engineering Team**

- Managed a team of 5 other J2EE developers
- Lead the design and development on
  - Localization and Co-branding frameworks
  - Rich client framework (on top of Eclipse RCP)
  - Rules engine for claims processing
- Participated as key member in requirements and analysis
- Provided level of effort and critical path information using Gantt charts (Microsoft Project)

### **Senior Developer, Member Access Web Services**

- Played a key role in the design and implementation of a web service solution to provide member data to Humana, Cigna, and other providers.
- Designed and implemented Web Service solutions using Xfire and Axis
- Designed and implemented an asynchronous usage tracking system using JMS

### **Project Lead, Architect and Developer, Java MVC Framework**

- Architected and developed a complete in-house Java MVC Framework customized to our needs.
- Metadata and Business Rules – Captured in XML, and made reusable for both model and view
- Data Persistence Abstraction – Eliminated use of SQL and allowed seamless switch to LDAP
- Html Components – Powerful set of Java View components that render as HTML/JavaScript
- Html Templating – Separates GUI design entirely from Java Code and business logic
- Common Framework – Increased productivity dramatically

### **Project Lead, Architect and Developer, MyArgus Security Management**

- Architected and developed a suite of web-based tools for managing application security.
- MyArgus portal – a secure launching area providing users access to their authorized web applications
- Security Management Web GUI – highly customizable groups, roles, permissions and data filters
- Preferences – gives clients fine-grained control over co-branding applications for their end users
- Pass Through Authentication – end users create their own MyArgus accounts authenticated against existing member information, using a dynamic, customizable authentication wizard

### **Technical Lead, Web Information Manager**

- Architected and developed a web-based workflow process, using J2EE technology, for managing reports and other information. Administrators from Argus, insurance companies, and manufacturers process thousands of reports a year. The Web Information Manager automates the report verification process,

allowing reports to be routed via the web in a customizable workflow.

## **Software Developer, Inovaware**

Honolulu, Hawaii — 1999 - Dec 2001

Employed as a software developer at Inovaware Corporation in Honolulu, HI. Inovaware provides a flexible, comprehensive customer care and billing package for ISPs/ASPs and content providers.

### **Accomplishments**

- Architected and headed development of a real-time Java Rules Engine for dynamically assembling business rules
- Led a team in designing and implementing a Workflow Engine using Java, EJB, C++, CORBA, XML and JDBC. The system was deployed on the WebLogic Application Server
- Developed a real-time data Rating Engine
- Designed XML components of the above projects using XML-Schema, XSL, DTD
- Designed relational databases to define business logic behavior for the above projects
- Used JDBC and EJB Entity Beans for Oracle, MS SQL, and MS Access
- Implemented back-end process components of billing software
- Implemented GUI components

## **EDUCATION**

### **Brigham Young University Hawaii**

BS Computer Science — 1999