

# Michael A. Thomas

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## Objective

A senior-level (but still very hands-on) position with a company that desires a highly creative technical leader with a long track record of making teams more effective.

## Skills, Technologies, and Tools

Perhaps most importantly, I am an unusually effective (for a techie, at least) written and verbal communicator. I communicate well with all levels of business and end users, verbally, in writing, and graphically. I lead by example, and am constantly improving productivity by identifying and implementing pragmatic processes and technologies.

I also offer expertise in the following areas:

Area	Experience
Cloud	<i>Amazon Web Services (AWS):</i> VPC, EC2, ECS, RDS, CloudFormation, OpsWorks, SQS, ELB, ElastiCache, CodePipeline, CodeBuild, CloudWatch, etc.
DevOps	Docker, Vagrant, Chef, Packer
Languages	Java, Javascript, Kotlin, Ruby, Groovy
Web	HTML, CSS, Javascript, JSF, JQuery, Underscore
Server	Spring Boot, Tomcat, Glassfish 4/5 Alternatives such as Ruby on Rails, Meteor
Libraries & Frameworks	Java EE 7, Spring, Spring Boot, Hibernate, Quartz, Drools, Camel, many others
Database	Oracle, MySql
OS	Long-time *nix user, administrator "light"
Builds	Maven, Gradle, Ant, Jenkins
Soft skills	Mentorship, presentations, technical writing
Process	Agile: Scrum, XP, TDD
Testing	JUnit, EasyMock, Mockito, PowerMock, Fitnesse, RSpec, Jasmine, others
Modeling	UML and data modeling
Source Code Control	Git, Subversion, CVS, many others



## Experience

### Buildit

(03/2017 ~ current)

Platform Engineer specializing in architecture, design, and implementation of back-end APIs and the infrastructure to execute them.

Introduced improved AWS monitoring and alarming techniques (as well as simple discussions with the platform engineer community) to help the company keep track of, and reduce, expenses. This helped to reduce expenses by at least half.

Contributed a new form of what Buildit calls a "Rig" — a complete CI/CD pipeline with integration, staging, and production environments. To accomplish this, I used my depth in AWS technologies and tools to promote and co-create the "AWS Bare Metal Rig" which is created using only AWS CloudFormation, Bash, and Make (in other words, no third-party tools). This approach simplifies the number of tools needed to fire up an AWS environment.

Contributed to an internal room booking application API written using Spring Boot and Kotlin on Java 1.8, and deployed on the "Bare Metal" rig.

*Technologies used:* Java 8, JPA, Spring Boot, Junit 5, AWS (Lambda, CloudFormation, RDS, EC2, S3, ECS, Route53, CloudWatch), Javascript (ES6)

### Predictive Logic

(06/2013 ~ 12/2016)

Tech lead and architect for a rewrite of the company's successful automated underwriting system. The rewrite involves creating a highly decoupled collection of micro-services communicating mainly via message queues (ActiveMQ), and using Apache Camel for routing, transformation, etc. Deployed locally using Vagrant and Chef, and integration, test, and production in AWS.

Was instrumental in championing, and implementing, the company's move to the cloud (AWS). Based on my research, recommendations, and DevOps work, we successfully used AWS OpsWorks and CloudFormation as automated deployment platforms using a combination of open source and locally-developed Chef cookbooks and Maven plugins.

*Technologies used:* Java EE 7, JPA, JSF, Drools, PrimeFaces, Maven, Git, Camel, ActiveMQ, MySQL, Chef, Vagrant, Packer, AWS (EC2, SQS, S3, OpsWorks, ELB, Route53, CloudWatch), JUnit, Mockito, Infinitest, Fitnesse

## Digital Answers, LLC: Panera Bread, Mountain Goat Software

(11/2012 ~ 05/2013)

Provided custom development services to Panera Bread and Mountain Goat Software.

For Panera Bread, developed a number of custom "plug-in" modules for a commercial enterprise data management package that Panera uses to manage corporate reference data. The plug-ins were written in Java Swing, and accessed an Oracle database to provide a variety of useful extensions to the package's basic functionality. Also helped to devise a "template-based" menu creation design, and the related implementation, which builds custom menus for delivery to POS devices in Panera Cafes. This solution completely avoided the costly duplication of effort in building menus that was previously required.

For Mountain Goat Software, developed a corporate dashboard using the Geckoboard SaaS platform. To provide data to the dashboard, developed custom JSON push (POST), and pull (GET), feeds using simple Ruby CGI scripts. These feeds used private JSON data extracts and third-party services as datasources.

*Technologies used:* Java, Swing, JDBC, Gradle, Git, JUnit, EasyMock, Oracle, Ruby, RSpec, JSON, CSS.

## Pivotal Labs

(09/2012 ~ 11/2012)

Contributor on the Pivotal Tracker project. Paired with other Pivotal developers to complete stories in both the front-end and back-end aspects of Tracker.

*Technologies used:* JavaScript, Backbone.js, Handlebars.js, Underscore.js, JQuery, Jasmine, Ruby on Rails, RSpec, Git.

## ePlan Services (formerly Fast401k.com, now a Paychex company)

(02/2004 ~ 10/2012)

Lead developer/architect, with responsibility for the company's 401(k) record keeping and plan operations system, from the UI through to the details of the back-end services and third-party interfaces I was a founding member of the Scrum team formed in late 2003, and originally managed by Mike Cohn. Responsibilities and achievements include:

- *Mentorship* of the (relatively senior) development team in development best practices, OO design, design patterns, J2EE and general application architecture, component-development, site design, developer testing, etc.
- A program of *continuous improvement for the Fast401k system*, which had a poor architecture, and generally low-quality, unmaintainable code. To achieve this, I:
  - Defined a properly layered and modularized architecture for new code added to the system.
  - Devised techniques to allow legacy code and new code to work together under the same application without excessive coupling (see my article on Strangling Legacy Code).
  - Introduced or championed development practices and tools such as Test Driven Development, Domain Driven Design, etc.
  - Led on developer testing techniques. During my tenure the suite of JUnit tests increased from 20+ to 6,000+.
- *Leadership of the library/framework selection process.* Under my guidance the team adopted and mastered the Spring framework for web MVC, back-end, and batch development; Hibernate, Groovy, EasyMock, Quartz, Dojo Toolkit and many other development tools and libraries.

- The *creation of an all-new attractive and feature-packed UI* for 401(k) plan administrators using HTML, CSS, Javascript, and the Dojo Toolkit.
- Technical oversight (and hands-on development) of *many* new or rewritten system features including: a higher-performance fee asset-based fee processing framework, annual compliance testing, payroll contribution entry and processing, electronically-signed loans, distributions, and plan documents, and the implementation of an automated, scheduled, batch trading system.
- Applying component-based development concepts that *save development time and increase consistency*. Examples:
  - A set of web components that give a common look and feel to end-user requests for financial transactions such as loans and distributions. New such requests are assembled from these components in a minimum of time compared to prior approaches.
  - UI and back-end components to collect electronic signatures on documents and transaction requests.
- *Built a custom Quartz job-management UI*, and adapters to manage asynchronous processes in the system: **job overview, job detail, add job trigger**
- *Created a document-generation framework* with Windward Reports at its core. The framework provides centralized configuration and creation of dynamic plan document PDFs. The design of this framework allows plan documents to be delivered separately, or aggregated into larger compound documents, all via configuration.
- *Performance tuning* as the need arose, using various profiling tools.
- Used Ant to achieve *automated configuration* of the web application for differing deployment environments, branded CSS generation, code coverage reporting, etc.

*Technologies used:* Tomcat 5.x, Glassfish Web Server, Java, Groovy, J2EE, Spring Framework, Velocity, HTML, CSS, Javascript, Dojo Toolkit, Hibernate, Quartz, Oracle, Windward Reports, JUnit, EasyMock, Fitness, Ant, Emma, Korn Shell, Ruby.

## **BEA Systems**

(11/2001 ~ 02/2004)

Acted as a lead developer for the MyBEA enterprise infrastructure team, which provided frameworks and services for the MyBEA suite of "member" applications (e.g., eSupport, Dev2Dev, etc.). Responsibilities and achievements include:

- *Designed the MyBEA cluster architecture*, which spanned three WebLogic domains, offering high-availability for applications and services on the MyBEA platform.
- *Designed, developed, and deployed a single sign-on (SSO) framework* for MyBEA member applications.
- *Quality evangelist* for our deliverables, including not only code correctness and performance, but testing, and documentation for our end users.
- *Performance tuning* of infrastructure services using JProbe and Optimizelt.
- *Mentorship* of other staff on development practices, unit testing, Unix, and BEA's development environment.
- *Introduced JUnit* as a replacement for proprietary testing harnesses.

*Technologies used:* WebLogic Server (6.1, 8.1), WebLogic Portal 4.0, Java, J2EE, Oracle, JUnit, Ant, Together/J, Korn Shell, Ruby.

## Digital Answers, LLC: Oppenheimer Funds

(12/2000 ~ 09/2001)

Consultant and Lead Developer on the "Portfolio Builder" project at Oppenheimer Funds. Contributions include:

- The design and implementation of a financial performance "calculator" component. The calculator produced total return and internal rate of return figures for multiple timeframes for a given portfolio. The return figures were included on paper and web-based quarterly investor reports.
- Performance tuning using JProbe. My work resulted in a roughly *50% improvement in responsiveness* of the application to online queries, and brought the application well into conformance with established SLAs.
- The design and overall architecture of the statements-generation subsystem. *I pushed back on a very over-architected solution, and implemented a simpler and better-performing approach.*
- The design and implementation of a multithreaded batch "driver" for statements production (which, due to intensive JUnit testing, had zero defects reported in test and production).
- Consultation and mentorship on general object-oriented design and WebLogic Server architectural approaches.
- The development of an automated build process using Ant

*Technologies used:* WebLogic Server, Sybase, Java, J2EE, JUnit, JProbe, Ant, Together/J, Korn Shell, Windows CMD shell.

## Qwest Communications

(6/1999 ~ 12/2000)

Architect and lead developer for the Work Delivery System (WDS) team. Involved in all major technical decisions that affected the team.

My major accomplishment on the WDS team was to conceive of, sell to management, develop, and deploy two frameworks:

- a domain-specific Web framework that allowed us to move away from a troublesome "fat client" approach to a far easier to develop and deploy web-based approach.
- an external system integration framework

In particular, the Web framework was estimated by management to *reduce GUI development time by two-thirds*. We no longer had to deploy a Java client application, which had been a source of many headaches. Our applications, which previously crashed almost daily, became true 24x7 applications. Our users were thrilled with the browser version of the applications.

*Technologies used:* WebLogic Server, Java, J2EE, TopLink OO/relational mapping, Oracle, Together/J, RMI.

## BoldTech Systems

(12/98 ~ 06/99)

Played an architect role on a number of projects using Vitria Businessware integration middleware.

*Technologies used:* Vitria BusinessWare, Java, SQL Server, Oracle, and Microsoft Access.

## **Digital Answers, LLC: FirstPlus Financial**

(08/1998 ~ 12/1998)

Provided consulting services directly to the CIO, including organizational analysis, development process improvement, and the architectural review of a multi-tiered Java/CORBA-based application that was nearing completion.

## **Mirim, LLC**

(05/1998 ~ 7/1998)

Held architect position in this accounting start-up. Responsibilities included:

- Identification of appropriate development and deployment technologies
- Mentorship of engineering staff in object-oriented analysis and design techniques using UML
- Ownership of the enterprise object model and architectural models

## **Ernst & Young, LLP**

(05/1993 ~ 05/1998)

Lead developer on many high-visibility internal projects:

- Architect, designer, and developer for a large (\$10M) internal development effort to develop software products to automate the firm's own management consulting processes.
- Designer and developer of the firm's first web-enabled methodology deployment mechanism.
- Technical lead and developer for many projects centered around Navigator and Fusion, the firm's methodology and toolset, and owner/architect of the internally-developed application framework upon which the toolset was built.

## **Electronic Data Systems (EDS)**

(01/1986 ~ 05/1993)

Lead developer on a large variety of projects on many platforms, including:

- The first Windows-based, object-oriented, C++ system developed by my group.
- Numerous projects on large mainframe Medicaid claims processing systems.

## **Published Articles**

- **Strangling Legacy Code**, *Better Software*, Oct 2005

## **Presentations/Appearances**

- **Rocky Mountain Software Symposium, Fall 2004**, presented "*Strangling Legacy Code*"