

Burt Beckwith

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Summary of Qualifications

- [Grails](#) expert
- [Groovy](#) expert
- [Hibernate](#) expert
- [Spring Framework](#) expert
- [Spring Security](#) expert
- Strong experience with server-side JavaScript ([Node.js](#), [MongoDB](#))
- Extensive experience with JDBC and JEE technologies
- Author of books on Grails and J2EE & WebLogic Server
- MS in Mathematics
- Harvard Instructor
- Frequent conference speaker

Career Related Experience

[Harvard Medical School](#)
Department of Biomedical Informatics

11/2017 – present

Senior Full Stack Web Developer

Part of an multidisciplinary team of data scientists, medical doctors, and developers creating tools to study large and disparate datasets from the domains of biology, healthcare and social media.

- work with several data registries to create an “Information Commons” where researchers can browse and analyze data
- maintenance and enhancement of the open source [PIC-SURE](#) research API and its integration with other applications including [i2b2](#) / [tranSMART](#), [JupyterHub](#), etc.
- gathering and understanding requirements
- participating in architectural discussions
- proposing and implementing solutions
- work with Oracle RDS instances and PostgreSQL, SciDB, PostGIS, and/or other GIS-aware databases
- utilize cloud management and monitoring applications such as DataDog, Splunk, Cloudcheckr, and others
- exploring data streaming and storage methods to scale past the several terabytes that are currently managed
- facilitate the sharing and exploration data through easy to use graphical interfaces and API endpoints
- work with research scientists both internally and externally to identify software requirements

[Agile Orbit](#)

02/2016 – 11/2016

Senior Software Engineer

Grails project development and consulting for Agile Orbit customers.

Primary contract was an update of a large Grails application:

- Upgraded Grails from version 2.3 to 2.5.4, plus some design and code for an eventual upgrade to Grails 3 once incompatible app functionality was ready and remaining required external plugins were updated to work with Grails 3
- Converted security from a highly customized implementation based on Apache Shiro to Spring Security, including permission-based access implemented with annotations and AST transformations to augment the traditional role-based approach
- Refactored inefficient database access code and fine-tuned transactional behavior across the application
- Reworked application GSP pages to move Groovy code into tag libraries and services
- Performed significant code refactoring and cleanup
- Unit, integration, and functional testing

Additional work included the development of the [Schwartz Grails plugin](#), a replacement for the Quartz plugin.

Gradle Inc.

09/2015 - 11/2015

Principal Engineer

Gradle core developer.

Grails Consultant

10/2014 - 09/2015

Grails consulting, development, and mentoring for various remote clients in the US.

Harvard Extension School, Cambridge, MA

09/2014 - 12/2014

09/2013 - 12/2013

Instructor

Taught [CSCI E-56 Web Application Development with Groovy and Grails](#) in a classroom setting with remote/recorded access to approximately 45 students each semester.

Stealth Startup, Boston, MA

01/2014 - 09/2014

Principal Consultant

- Developed a large web service and several smaller supporting applications using [Node.js](#) and [MongoDB](#) to provide persistence, security, and application logic for iOS clients of a new, disruptive collaborative social application being developed for a client. Other work included client and server configuration and integration with real-time video and audio (RTMP) to support audio and video chat, video multicast, DVR and playback, using [EvoStream Media Server](#), [NGINX-RTMP](#), and [Wowza Media Server](#).
- Also added integration with 3rd-party services including [Amazon S3](#), [PubNub](#) (for realtime chat and presence), and [Twilio](#) (SMS messaging).
- Integrated several JavaScript libraries to implement application functionality, including [Express](#) (MVC framework), [Mongoose](#) (MongoDB ODM), [GridFS](#) (MongoDB distributed file storage), [I18N](#), [Passport](#) (security), [Winston](#) (logging), [Grunt](#) (build), and extensive use of [Mocha](#) for a large suite of tests.
- Implemented error notifications to Android devices using [Google Cloud Messaging](#) and a custom Android app.
- Configured build and deployment process of the Node.js application at [Heroku](#), and much of the configuration and testing of video servers and smaller Node.js applications for monitoring and autoscaling (custom implementations to handle the more complex issues related to upscaling and downscaling realtime video) at [Amazon AWS](#).

SpringSource / VMware / Pivotal, Palo Alto, CA

02/2010 - 11/2013

Senior Member of the Technical Staff

Core Grails team member. Responsibilities include development and maintenance of the Grails framework, plugin development, and Groovy and Grails training and consulting. Developed [over 60 plugins](#) adding a wide variety of functionality to Grails. Primary focus areas included persistence and security.

Grails Consultant

06/2009 - 02/2010

Development, support, and mentoring services for various clients using Grails.

Students Only / Edhance.com, Cambridge, MA

01/2008 - 10/2009

Senior Software Engineer

- One of two developers.
 - Wrote a live chat application using the Grails framework for web-based technical support.
 - Integrated Shibboleth-based authentication for universities in the InCommon federation to automate student enrollment verification.
 - Wrote significant portions of the Edhance web site, a new site that helps college students save money at participating merchants, including:
 - Merchant signup
 - Payment and cashback processing, integration with credit card payment processors
 - Site security (using Spring Security)
 - Data analysis
 - Reporting engine
 - MySQL administration
 - Tomcat server clustering for high availability
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[American Well](#), Boston, MA

03/2007 - 01/2008

Senior Software Engineer

- Senior developer for the CareTalks web application
 - Implemented much of the early development infrastructure including Subversion server over HTTP using Windows domain authentication, Cruise Control, Ant build process, unit test process, Spring and Hibernate configuration, and core code.
 - Implemented form-based application security using Acegi (Spring Security), and SSO using CAS and Acegi
 - Created a database upgrade facility to configure and apply DDL and DML scripts to any existing
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release version of a schema to update to the current version, including an event-based notification subsystem that was the prototype for an application-wide event subsystem.

- Implemented I18N, extended to allow customized messages, images, and CSS for a hierarchy of customers both per-Locale and per-customer.
- Data access development using Hibernate, JDBC, PL/SQL stored procedures.
- Performance and scalability tuning, object caching.
- Mentored other developers.

JumpTap, Cambridge, MA

10/2006 - 03/2007

Senior Software Engineer

Developed enhancements and extensions for a Java-based reporting engine used to generate weekly, monthly, and ad-hoc reports tracking usage, trends, and metrics for JumpTap's mobile phone search engines. Tasks include custom report development, automation via custom Ant tasks, and optimization of MySQL database structure, schema, and SQL for performance and scalability.

Primer Biosystems, Mansfield, MA

06/2005 - 10/2006

Principal Software Engineer

- Lead developer at Primer
- Wrote data analysis and visualization tool (a Swing-based desktop application using Spring and Hibernate) for Assay Development scientists that significantly reduced repetitive tasks and streamlined workflows.
- Implemented enhanced algorithms for electropherogram peak detection and quantitation, enhancing or replacing those in the device software (GeneMapper).
- Implemented data export to image files, PDF, and Excel workbooks with experiment data, summary charts, and statistical calculations that function as a report and as a "what if" analysis and prediction tool.
- Created a web-based auto-analysis workflow tool that monitors electropherogram device output, generating initial GeneMapper analysis, then applying custom algorithms and exporting results to Excel. The autoanalysis application automatically creates a Wiki page with an analysis summary and the Excel workbook attached, as a form of electronic lab notebook.
- Implemented application auto-update to ensure users have the latest version.
- Implemented application access outside the firewall by tunneling database and file requests through SSH, including a SOAP web service to serialize Oracle queries to work around the known issue of Oracle's thin driver's inability to tunnel over SSH.
- Purchased and configured development/bioinformatics/intranet servers running Fedora Core Linux, MySQL, Apache, CVS, Bugzilla (replaced with Atlassian JIRA), Wiki (Atlassian Confluence), Samba, SSH.
- Implemented a web-based application for monitoring and administrating compliance and

quality assurance, using Ajax, Hibernate, and Spring

Wellington Management, Boston, MA

12/2004 - 05/2005

Senior Software Engineer (contract)

- Senior developer for the Global Trading System application, a WebLogic-based server application and Swing client for internal trading.
- Refactored server-side event handling mechanism to batch logical groups of asynchronous events to accurately synchronize the client with the server and fix timing issues that resulted in temporary error states.
- Various performance and scalability fixes and enhancements.
- Developed an aspect-oriented performance and scalability monitoring framework for benchmarking.
- Developed Swing panels and J2EE integration code for new FX (Foreign Exchange) trade editing functionality.

National Leisure Group, Woburn, MA

12/2004 - 05/2005

Senior Software Engineer

Senior developer on the Dynamic Packaging System (DPS) team. DPS is a high volume, J2EE-based (JBoss) real-time availability and booking engine for vacation packages. The application powers the Vacation tabs on the Orbitz and Yahoo! travel web sites. Implemented various bug fixes and enhancements in the DPS system. Completely rewrote an in-house server farm monitoring system (the "OpCenter") which uses Apache JMeter to test server availability, health, response times, and various other metrics. Designed and implemented a role-based security system for web-based administrative applications, including single signon between applications across servers.

Biogen Idec, Cambridge, MA

07/2002 - 05/2004

Senior Software Engineer (contract)

Senior Java developer with the Bioinformatics group. Primary duties involved development for the Biogen Annotation Tool (BAT) project, a web-based warehouse application that unifies many heterogeneous Bioinformatics data sources into a common interface for use in gene research. Wrote the database API for accessing the BAT database. Wrote the database search engine, including seven different search modes. Wrote the gene list import facility. Created several JSP custom tags. Wrote a help system for context-sensitive help throughout the site. Mentored other Java developers. Automated the build and deployment process using Ant. Wrote various developer utilities including JSP precompilation, administration JSPs, database connection pool, standardized logging. Refactored significant portions of the existing code base for performance, reuse, and consistency. Also designed and wrote a Swing-based port of a VB6 desktop application used for visualization and analysis of Mass Spectrometry data. The tool allows scientists to import mass spec

data from a variety of data formats. Users utilize 2-dimensional and 3-dimensional views of the data coupled with database integration to identify peptides and proteins.

Element K, Rochester, NY

06/2001 - 07/2002

Software Engineer

Senior Java developer for the KnowledgeHub Learning Management System (LMS), an EJB-based ASP solution. Designed and implemented enhancement features in small teams, including a Web Services framework to expose KnowledgeHub functionality to clients and partners via SOAP. Technologies included EJB, JavaBeans, Servlets, JSPs/JSP TagLibs. Part of a team chartered to improve performance and scalability of the application, as well as the maintainability of the codebase. Took the initiative to become a subject matter expert in several areas, including J2EE technologies, CVS source control process and administration, SCM process, build process, Ant tool, and WebLogic configuration. Re-engineered the software build process, decreasing build time by over 75%. Wrote custom Ant extensions. Took the initiative to write utility software for the development team, including a GUI front-end for Ant and a GUI tool to manage multiple local WebLogic server configurations. Took the initiative to bring JUnit unit testing to the organization, initiating training the development team and participation in a small team formalizing and documenting the unit testing process. Wrote a book on J2EE technologies and WebLogic Server for the Element K jCert certification series.

Xerox Corporation, Rochester, NY

10/2000 - 06/2001

Software Engineer (contract)

Senior Java developer for the WebXpress solution. Project was a distributed web-based Java application using Jini & JavaSpaces, JDBC, XML, JSP, JSP Tag Libraries, Servlets and Applets to provide customized document conversion and print job routing via the web for Xerox customers. Used JIntegra to automate applications in Java via DCOM to convert documents to PDF/PostScript for printing. Technologies included Apache web server, Tomcat, MySQL, CVS, and the Xerces XML parser. Also developed Swing-based Java utilities.

Auragen Communications, Rochester, NY

09/1999 - 10/2000

Applications Developer

Web and database programming for client web sites; technologies include JSP, Servlets, JavaBeans, JDBC, ASP/VBScript, ADO, JavaScript/DHTML, XML, HTML; databases include Oracle, SQL Server, Informix; installation and administration of Apache web server and JRun application server. Sites include Zap.com's Zapbox, my.wegmans.com, and the job search sitelet at www.kodak.com.

Education

Syracuse University, Syracuse, New York

09/1994 - 05/1996

M.S. - Mathematics

Degree: 05/1996

University of Maine, Orono, Maine

09/1987 - 05/1993

B.A. - Mathematics

Degree: 05/1993

Publications

[Programming Grails](#)

O'Reilly, 2013

ISBN 978-1449323936

Technical editor for [Grails in Action](#)

Java™ 2 Enterprise Development with BEA WebLogic™

Element K Press LLC, 2002

ISBN 0-7580-3313-3

References

Available upon request.