

# David P. Caldwell

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## **This document demonstrates some of my technical skills**

The master copy of this document is the HTML version hosted on the web, at [davidpcaldwell.com](http://davidpcaldwell.com). Other formats are automatically generated.

The process of converting this document to other formats uses:

- A custom JavaScript module system (on both the server side and client side), developed by me: see <https://bitbucket.org/davidpcaldwell/slime/>,
- The client-side DOM to build a client-side XML (XHTML) representation of this resume, inlining all the CSS styling information in a cross-browser way,
- AJAX to upload the client-side XHTML to the server,
- A custom server-side JavaScript/Rhino HTTP client, as well as a custom interface to the Google Data APIs (this document particularly OAuth2 and the Google Drive API) to create a Google Document from the representation in the browser and convert it to each supported format,
- A custom Java/JavaScript HTTP server (see <https://bitbucket.org/davidpcaldwell/slim/>) running on the Google Cloud via Google App Engine to host this site and serve these files.

## **Summary**

Senior consultant with 15 years of experience and very strong software development, training, and coaching skills available to work in Rhode Island and the Boston area or remotely. Main software development skills include high proficiency in creating applications and frameworks using Java and JavaScript for a wide variety of environments, including the server, the web (server-side and client-side), the desktop, and mobile devices. Candidate had second career as political consultant during which he did occasional software work and acquired unusual leadership and teamwork experience.

## **Experience and Accomplishments**

### **Lead Developer, 1-800-MY-APPLE**

Led the development of software that answers the phone when customers call the [Apple Store](#) in the United States, Canada, the United Kingdom, and Ireland.

### **Lead Developer, Finovate Conference Fall 2013 Best of Show**

Developed [award-winning](#) application to illustrate how financial services companies can provide better telephone-based support to their customers. (Coverage from: [BostInno](#))

### **Speaker, JavaOne Conference**

Authored a presentation titled [Patterns for Integrating Java and JavaScript Technology: Tales from the Front Lines](#) and presented it to a large audience at the [2008 JavaOne Conference](#), the major industry conference for Java developers.

## Unit Testing Leader

Drove the adoption of unit testing on two projects: first, for the Mozilla Foundation, creating a Java environment in which the Firefox JavaScript conformance tests could be run against the [Rhino](#) JavaScript engine, and then for Apple, creating a unit testing framework so that unit tests could be authored for the 1-800-MY-APPLE telephone system in order to ensure it conversed correctly with callers, provided correct information to them, and routed calls to the correct human call center at the correct time.

## Committer, Mozilla Foundation

One of the three project leads on the [Mozilla Rhino](#) project, a JavaScript interpreter written in Java which is bundled with the Java SDK and many other products. Author of the [E4X](#) support for XML processing bundled with Rhino as well as the software used to verify conformance with the JavaScript specification and the Firefox JavaScript implementation, known as [SpiderMonkey](#).

## Oracle-Certified Java Enterprise Architect, Java Developer, Java Programmer

Have been the lead architect on over a dozen Java-based projects, using a wide array of technologies.

## Java Instructor (Oracle-Certified), various schools

Taught Oracle (then Sun)-developed curriculum (SL-275), as well as custom-developed curriculum using [Object-Oriented Programming in Java](#) as the primary textbook.

## Authority on Java/Cygwin

Cited in the [Apache Ant reference manual](#), and often consulted by developers with questions about Cygwin, Java, and JNI.

## Political Consultant

Recruited, motivated, trained, and coached volunteers and staff with various organizations advocating on behalf of the LGBT (lesbian, gay, bisexual, and transgender) community.

### ***Los Angeles Gay & Lesbian Center, LGBT Mentoring Project, and other organizations***

Worked in a consulting role with the staff of several organizations interested in doing much more effective political work. Primarily responsible for identifying and mentoring promising current and potential staff members with campaign organizations in order to improve their leadership and analytical skills. Other roles ranged from managing ten paid field staff working to win an election surrounding marriage for gay and lesbian couples in Maine to managing a campaign to verify student provisional ballots in Bowling Green, Ohio.

### ***Heights Families for Equality***

Ran campaign in which Cleveland Heights, Ohio became the first city in the country to pass a pro-gay ballot initiative. Organized a massive field campaign by recruiting and training over 1,000 volunteers, resulting in one-on-one conversations with nearly half the voters in Cleveland Heights using only volunteers and raising \$85,000. Recruited and trained leaders to assume volunteer leadership roles in this effort. Responsible for dealing with the campaign's vendors.

## Clients and Selected Projects

- **Cengage Learning**  
October 2013 - Present
  - Provided leadership as higher education publishing company re-oriented their business toward providing digital solutions. System uses distributed technology that incorporates embedded web

components from multiple vendors, client-side software like jQuery, JavaScriptMVC, AngularJS, and ReactJS, and server-side software using Java (including ElasticSearch, JDO, JAX-RS, Google Guice) and Node.js to provide content to students and grading and course authoring services to instructors in higher education. Provided leadership for both technical enhancements and ruggedization as software continues to double in usage each year.

- Technical lead on team that provides [MindTap](#) software to hundreds of thousands of students.
- Developed training curriculum for new developers that introduced entry-level developers to the spectrum of tools, technologies, and libraries necessary to contribute to the production online learning platform.
- As company ramped up software development to deal with transition to digital learning technologies, provided tools that enabled developers to begin working on MindTap **12 times faster**, saving the organization approximately \$100,000 as of this writing.
- Reduced startup time of application by 30% by developing JDO-compatible object-relational mapping software that allowed the specification of arbitrary multi-table queries in order to create domain objects capable of providing data to the web application.
- Developed software to automate the previous manual and error-prone process of doing monthly releases.

- **Interactions Corporation**

September 2011 - October 2013

- Created software to model conversations with telephone customer service representatives to allow callers to communicate with an automated system using natural language.
- Wrote Java development framework used by other developers to ease the creation of applications for external customers.
- Implemented JavaScript API that allows the use of JavaScript to develop parts, or the entirety of, applications for the Java application development platform.
- Designed and developed environment that allowed the use of JavaScript to implement interfaces between customer and external customer systems.
- Authored an Apache Maven plugin to allow Maven builds to be implemented in JavaScript.

- **LGBT Mentoring Project (now part of the Los Angeles LGBT Center)**

July 2008 - August 2011

Consulted with several organizations, doing IT work from time to time as needed, but primarily coaching, training, and mentoring leaders and organizations to do much more effective political work on a larger scale. Work ranged from managing up to fifteen staff to analysis of polling and other data, but especially involved recruiting, assembling, and motivating large teams of people to engage in political work. Clients included [EqualityMaine](#), [One Bowling Green](#) (Ohio), [Equality Maryland](#), [Vote for Equality](#) (Los Angeles), [Ask Cleveland](#), and [SAVE](#) (Miami).

- **National City Bank (now PNC)**

February 2007 - August 2008

- Created server system for processing banking transactions and credit card transactions to implement bank's industry-leading rewards program, [Points by National City](#).
- Created business rule processing engine by embedding the Rhino JavaScript engine in a J2EE server, for ease of maintenance.
- Built SOAP interface to server used by client application developed by another development organization.

- **Kroger**

January 2007 - August 2007

- Created human resources system for allowing multilingual employees in high-turnover industry to maintain their own personal data in the company's server. System is [still in production](#) (as of May 2016).
- Created templating structure using Rhino JavaScript engine running inside Websphere Application Server that transformed mockups created by interface designer into dynamic pages.
- Interfaced with client LDAP server using JNDI in order to read and maintain employee data.

- **Industrial Areas Foundation**

October 2006 - November 2006

- **Penske Logistics**  
November 2004 - November 2006
  - Developed software to support and track nationwide fleet using GPS-enabled cellular phone application.
  - Developed J2EE/servlet replacement for standalone Java daemon/ASP pages to serve incoming requests from J2ME cellular phone application.
  - Developed J2ME application with bar-code scanning and GPS capability to help automotive customers track shipments. Target device was a Motorola cellular phone with a bar-code scanning attachment from Symbol.
  - Developed SOAP interface to MapPoint which allowed easy examination of current and past state of fleet.
- **America Coming Together**  
September 2004 - October 2004
  - Created tools for performing ad-hoc queries against a rapidly developing online database of voters in a swing state during the 2004 presidential election. Client was a political organization undergoing extremely rapid growth and its existing front-end system was incapable of performing the functions needed and too slow to be usable.
  - Built a user interface to the database which implemented an SQL preprocessor to allow the generation of extremely complex queries from component parts. The interface used an unreleased HTML templating engine authored by my firm. This improved the turnaround time for generation of data by 10-100x.
  - Worked to optimize SQL Server database by building instrumentation framework for executing ad-hoc queries and generating timing data.
- **Associated Software Consultants**  
May 2002 - July 2004
- **Jones, Day, Reavis and Pogue**  
January 2001 - October 2001
- **Cleveland State University and Cuyahoga Community College**  
January 2001 - December 2001  
Taught several Java classes as part of continuing education offerings at local colleges.
- **Realty One (now Howard Hanna)**  
June 2000 - January 2001
- **Boeing**  
March 2000 - May 2000
- **Sherwin-Williams**  
September 1999 - March 2000
- **KeyCorp**  
January 1999 - August 1999
  - Provided web-based tools for clients engaging in international trade. Client's previous attempt to implement these tools had failed after nine months; my team cut implementation time by 70% while implementing twice as many features.
  - Responsible for overall application architecture; application was implemented using four tiers (a UI tier, a controller tier, a domain layer, and a database mapping layer), working around the limitations of the two-tiered tool ([NetDynamics](#)) the client had chosen as the application server.
  - Implemented the bottom two server-side tiers in the application. The database tier had an abstraction layer allowing the use of several storage systems, including a memory-based storage system, a relational storage system, an object database, and the host filesystem.
- **Sherwin-Williams**  
May 1997 - December 1998
  - Updated an existing freight payment system to implement new business rules and use more appropriate technology.
  - Replaced half of a \$1.5 million system for under \$60,000; replaced about 85,000 lines of code.
  - Targeted defect-ridden modules for replacement first. Dramatically lowered system's defect density.

- Kept system running and iteratively improved it; created object-oriented framework for domain while maintaining procedural interfaces used by other modules.

## **Proficiencies**

### **Java**

#### **APIs**

- JDBC
- JNDI
- JNI
- JMX
- JavaMail
- Java serialization
- Java reflection

### **Tools**

#### **IDEs**

- NetBeans

#### **Source Code Control**

- Git
- Mercurial
- CVS
- Subversion
- Visual SourceSafe
- ClearCase

#### **Code/Distribution Management**

- Ant
- Maven
- Nexus
- Hudson/Jenkins
- JIRA
- Bugzilla

### **JavaScript / Web**

- HTML (including HTML5, XHTML)
- CSS (including CSS3)
- DOM

## **Engines**

- SpiderMonkey (Firefox)
- Rhino
- Google Chrome/v8
- LiveConnect

## **Frameworks, Libraries, APIs**

- Google Chrome Extensions (with Native Messaging)
- JavaScriptMVC
- jQuery
- AJAX (XMLHttpRequest)

## **Architecture**

### **Protocols**

- HTTP
- SMTP, POP, IMAP
- FTP

### **Web**

- REST
- OAuth2
- SOAP
- Comet (HTTP server push)

### **J2EE and Server-Side Java**

- Java Servlets, JSP
- Enterprise Java Beans (EJB)
- Spring

### **Application Servers and Containers**

- Tomcat
- Google Cloud / Google App Engine
- Amazon Web Services (AWS)
- JBoss
- Websphere

- Weblogic

## **Design**

- Design Patterns
- UML

## **Data**

### **Relational Databases**

- MySQL
- Oracle, including PL/SQL
- Postgres (PostgreSQL)
- Apache Derby
- SQL Server

### **NoSQL Databases**

- MongoDB

### **Formats**

- XML (DOM, SAX, E4X)
- JSON

### **Google Data APIs**

- Google Calendar API
- Google Drive API
- Google Tasks API
- Google Apps Script
- Google Maps API

## **Other Programming Languages**

### **UNIX-related**

- C
- C++
- bash

### **RDBMS-related**

- PowerBuilder
- PL/SQL

- SQR

### **Other**

- PASCAL
- BASIC
- Smalltalk
- Assembly language (various processors)

### **Operating Systems**

#### **UNIX-like**

- OS X
- Linux
- Cygwin
- FreeBSD

#### **Mobile**

- Android
- WebOS

### **Communications**

#### **Classroom Teaching**

#### **Public Speaking**

#### **Media Relations**

#### **Management**

#### **Training**

#### **Coaching and Mentoring**

## **Education**

Case Western Reserve University  
B.S. Computer Science, May 1995  
Minor: Political Science