STEVEN LAWRANCE

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Objective: Architect, design, build, and maintain software as a software engineer with a long term
goal of becoming a software architect.

Employment History

Salesforce.com – Lead Member of the Technical Staff – API, Security, Sites, Core, and Splits
January 2007 to present

- Automated the setup of customers' https certificates for their Salesforce.com-hosted web sites from the UI down to the API calls made to the internal load balancer hardware and to the DNS provider. This involved designing, championing, and implementing this and its supporting features across multiple stakeholders, including product management, technical operations, security, development, quality, and support.
- Added IPv6 support to the Salesforce.com core system, from the database to the APIs and user interface
- Integrated a WYSIWYG web site editor and content management system with a team into the Salesforce.com codebase. My focus areas involved low-level connections and tie-ins to Salesforce.com as well as working with the release engineering and technical operations teams to get the site runtime systems configured and deployed. This product is known as Site.com.
- Brought attention to specific cross-site scripting (XSS) vulnerabilities by writing a Firefox Firebug extension that looked for improper string escaping and having quality engineers from every functional team test the system with the extension. After the bugs that this extension identified were fixed, and with other security improvements in place, a security auditing firm highly praised Salesforce.com's security.
- Improved an internal production testing tool's scheduling of tests by adding prerequisite expressions and event-driven processing to increase test parallelization
- Championed an improvement to an anti-phishing feature's design successfully, before it was released
- Automated HTTPS troubleshooting with an internal utility for support representatives that substantially reduced the number of escalated HTTPS cases
- Resolved customer cases related to the application programming interface (API) and secure sockets layer (SSL), quickly becoming a go-to person for HTTPS and SSL
- Enhanced the user interface of, added Apache Ant build files to, significantly improved the configuration system of, and added multiple-window browser screenshots to an internal production testing tool

San Francisco AIDS Foundation – Database Administrator and Software Engineer
September 2000 to July 2005

- Maintained a 200-user multi-tenant three-tiered HIV/AIDS database system that was used by all Ryan White CARE-funded AIDS service organizations in San Francisco in collaboration with the Department of Public Health AIDS Office and two direct partners. That involved all aspects of the software development lifecycle as well as server and client deployments, network maintenance, and top-tier user support.
- Implemented large parts of the data conversion and customization of the Foundation's purchased donor relationship management system
- Obviated a need for Crystal Reports by implementing web-based PDF reports using Microsoft Access, a customized PHP build to run as a COM server, and a custom-built COM object for use by ASP on the reporting server, saving a significant amount of money
- Migrated client operating system data during the Windows XP transition using a multi-platform Java-based profile migration tool that I wrote
- Planned, deployed, and provided training for Mozilla Firefox as the default web browser to all foundation users and created IE URL Lock for business-related sites that only worked in Internet Explorer
- Maintained the Cisco network equipment, including the PIX firewall's access control lists (ACLs) and routers' virtual local area network (VLAN) ACLs

Education and Training

Carnegie Mellon University – Master of Software Engineering, Institute for Software Research
Graduation: December 2006

- **Masters group project:** Bosch Security Configuration Assistant, which is an Eclipse-based application that generates three-dimensional security plans for buildings using the Jess rule engine and three-dimensional visualization. This was a group project with four other students, and it spanned the entire master's program.
- **Project roles:** Technology support manager and, via rotation, planning manager, software process manager, project risk manager, and quality manager
- **Focus areas studied:** Fault tolerant, distributed, real-time systems; software project management; formal models and analysis of software systems; software architecture; and software requirements elicitation
- **Accomplishments**
  - As a team, we met and exceeded our client's original picture of success by the end of the project's one-year time frame.
  - I reduced the status meeting data collection time to less than 30 minutes through data entry and reporting automation and used historical data to reduce our estimation error.
  - As the support manager, I kept our RedHat Fedora Core server and software available, secure, usable, and backed up using only one hour per week of my time on average throughout the project.
  - I integrated the client's Windows-based 3D visualization program into an Eclipse view by using Windows API tricks, despite having no source code access to that 3D visualization program.
- **Quality point average:** Graduated with 4.03 out of 4.00, which is a weighted grade point average (GPA), due to earning several A+ grades

Bryant University – Bachelor of Science in Business Administration
Graduation: May 2000

- **Focus areas studied:** Computer information systems with a minor in applied business statistics
- **Grade point average:** Graduated summa cum laude with a GPA of 3.96 out of 4.00
- **Leadership:** Served as president of Bryant PRIDE for more than a year and ran a Linux installation event

RedHat Certified Engineer (RHCE for 6.2): 806200565301847

Open-Source Projects That I Wrote and Maintain

IE URL Lock	http://ieurllock.sourceforge.net/ – A browser helper object (BHO) that prevents users from navigating to web sites in Internet Explorer and Windows Explorer while permitting URLs that match a Perl-compatible regular expression stored in the registry
GnuCash to QIF	http://gnucashtoqif.sourceforge.net/ – Converts a GnuCash XML file into a QIF or IIF file
DirList Database	http://dirlist.sourceforge.net/ – User directory system that runs as a CGI to serve up user lists, search, and synchronize with the operating system's user database
KJMouse	http://kjmouse.sourceforge.net/ – Busy cursor similar to KDE 2.2's cursor for Java
PAM CueCat	http://pam-cuecat.sourceforge.net/ – Turns the CueCat barcode scanner into a pluggable authentication module (PAM) library, permitting logins with bar code scans

Open-Source Project Contributions

Mozilla	Workaround code for a shutdown bug in Firefox (bug 239223) and helped others find the cause of a NTLM authentication crash in a pre-Firefox build
Novell openSUSE	Fixed bugs related to LVM on a USB boot drive and J-Pilot thinking that the username is always wrong on 64-bit platforms, and added a workaround for Bluetooth DUND issues
Pan	Contributed a small multi-threaded bugfix to a function that was crashing on several important dialog boxes in version 0.6.3
PHP	Contributed the snmpset() function to PHP 3.0.12 and PHP4 Beta2 so that ResNet Online could turn on the ResHall ports when students registered their computers
Samba	Patch to allow the use of 32-bit user and group IDs in smbmnt

Familiar Technologies in Alphabetical Order

Concepts and Protocols:

Current
Concurrency in Java
Data structures, loops, searches, and Big-O notation
DNS
HTTP, HTTPS, TLS, SMTP
IPv6
Networking, from abstract layers to concrete implementations
Public/private key-based authentication
Regular expressions, including Perl-compatible
Scrum

Past
Concurrency formal modeling with Zed, SPIN, and LTSA
IMAP, POP3
Licenses, communication law, copyrights, trademarks, and patents
Lightweight Directory Access Protocol (LDAP)
Quality attribute specification and management (also known as
       nonfunctional requirements)
RADIUS
Team software process and personal software process (TSP, PSP)
Uniform Modeling Language (UML) using Poseidon
VLAN (802.1q)
VRML and X3D
WebDAV
WPA2 EAP-TLS, PEAPv0/EAP-MSCHAPv2

Software Engineering Tools and Servers:

Current
Ant
Google Apps: Docs and Spreadsheets, Sites, Mail
JUnit
LibreOffice / OpenOffice.org
Oracle Database 11g
Perforce
Squid proxy server

Past
Apache 2.3, including mod_rewrite rules
Bugzilla, including customizations for TSP
CruiseControl
Installer authoring using MakeMSI, NSIS, and the RedHat Package
       Manager (RPM)
iValidator
MediaWiki, including an automatic update script that I wrote
Microsoft Access, Excel, Word, PowerPoint
Microsoft SQL Server 2000 and MySQL 5
NUnit
Subversion and the concurrent versions system (CVS)

Operating Systems:

Current
Mac OS X
Novell openSUSE on laptop, desktop, and server systems
Windows Server 2008
Windows 7 and 8

Past
Fedora Core 4 on server systems
Windows 2000, NT 4, Server 2003, and XP

Languages, Compilers, and APIs:

Current
Bash scripting
C
F5 API
Force.com API and Salesforce.com application
Java
JDBC
UltraDNS API

Past
ActiveServer Pages (ASP) with VBScript
C#
C++
Component Object Model (COM)
COCOA (some exposure)
CORBA
GNU Aspell (added a spell checker to a Java program with JNI)
GNU compiler toolchain (cpp, autoconf, automake, etc)
Java COM bridge technologies (Jacob and Jawin)
Java Native Interface (JNI)
Java Swing and AWT
Java3D
Microsoft Win32
ODBC
Perl
PHP
POSIX
Standard Widget Toolkit (SWT)
Visual Basic for Applications (VBA)
Xj3D

System Administration Tools:

Current
ActiveDirectory and OpenLDAP
OpenSSH
OpenSSL certificate creation, validation, and configuration
phpLDAPadmin
XCA

Past
Astaro Secure Linux (ASL) Firewall 4 and 5
Cisco Internetwork Operating System (IOS)
Cisco Router and PIX access control lists (ACLs)
Exim, Postfix, Cyrus IMAPd
Fedora Directory Server
FreeRADIUS
Novell NetDrive
OpenVPN
RedHat Fedora Directory Server
Unison and custom scripts for multi-platform longitudinal backups
Virtual private networks using IPsec over IPv4

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