

Contact

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Objective

Full-time position in software engineering.

Specializations

- Working with APIs
 - Version control systems (`git` especially)
 - Coping with domain-specific languages and legacy systems
 - Automating routine tasks (such as virtual machine setup) to save time
- λ Hacking on Emacs

Key Languages Javascript, C, Perl, SQL, shell script, Emacs Lisp

Other Languages C++, Java, Python, ANSI Common Lisp, Scheme, ML97

Software Git, Subversion, Mercurial, jQuery, Prototype, Emacs, VirtualBox, QEmu, CVS, Make, debuild

Services Facebook Graph API, Apache (1.x and 2.x), Courier IMAP, Exim, Postfix, MySQL, Oracle, shore-wall

Operating Systems 12 years GNU/Linux (Red Hat Enterprise Linux 3/4/5, Debian, Ubuntu), 5 years UNIX (HP-UX, Solaris)

Education

Purdue University

Type Undergraduate
Duration Aug. 2004 - Dec. 2007
Outcome B.S. Computer Science, B.S. Mathematics

Bethel College

Type Undergraduate
Duration Aug. 2002 - May 2004
Outcome Transferred to Purdue

Professional Experience

Ticketmaster Entertainment, LLC and Live Nation Entertainment

Position Software Engineer
Location West Hollywood, California
URL <http://ticketmaster.com/>
Duration Mar. 2008 - present

Interactive Seat Map (ISM)

I worked on the project to place an Interactive Seat Map (ISM) on select events on the US domain. This involved learning a custom domain-specific language written in Flash by another team, and communicating with a Flash widget via a Javascript container using said language. My part was telling the widget how to classify seats and control features like color, icon placement, and tooltips. I also wrote a small Perl library for our existing capacity testing framework to test this feature by simulating the frontend AJAX calls.

Facebook on Interactive Seat Map

In October 2011, we expanded the earlier work done on the Interactive Seat Map (ISM) to integrate it with Facebook. I authored an accepted proposal for redesigning the backend work for our existing third-party Facebook integration, bringing it in-house for greater degree of control and quality. I co-wrote a successful proposal to modify the ISM widget so that tooltips were rendered in the Javascript container instead of the Flash widget, suggesting an API that was largely adopted.

I extended an existing Perl CPAN module for Facebook Graph support to make it work with our custom caching solution, creating a shared library used by several backend controllers. I gave a talk on this topic at LA Perl Mongers entitled Integrating with Facebook using Facebook::Graph¹. I worked closely with several contacts at Facebook to make sure that our caching scheme and Facebook Graph usage would not run afoul of their guidelines. The backend work included proxying calls through a separate pre-existing “queue” service which holds the TCP connections open; I updated this service to support GET requests.

I wrote a Javascript library to make AJAX calls to our backend service to request detailed information about a user or their friends from the Facebook Graph. Part of this Javascript library involved defining a convention and interface for backend calls using jQuery that allowed for additional state to be passed around in subsequent calls.

¹<http://mwolson.org/notes/manual/FacebookSlides.pdf>

HCoop, Inc.

Position Volunteer Sysadmin
URL <http://hcoop.net/>
Duration Oct. 2006 - Mar. 2009

Planned and set up technical infrastructure and kept it running on a day to day basis. This was an unpaid volunteer position.

- Periodically updated and customized Debian packages
- Adapted several core daemons (Exim was a particular challenge) to work with the AFS filesystem and Kerberos

Primary contact for Apache, Courier IMAP/POP, Cron, General Debian issues, Exim, Mailman, Moin-Moin, PHP, SquirrelMail

Secondary contact for LDAP, MySQL, ProFTPd

RCAC at Purdue University

Position Assistant Sysadmin
Location West Lafayette, Indiana
Duration Mar. 2006 - Dec. 2007

Worked with various RCAC² (the Rosen Center for Advanced Computing at Purdue University) staff members to help carry out a variety of systems tasks.

- Installed Debian GNU/Linux and Red Hat Enterprise Linux on various kinds of machines using various methods (bootstrap, CD, USB drive, PXE)
- Made a database of information about the machines in our machine room
- Worked with `cfengine`, the software used to propagate configuration settings across many machines
- Designed an incident report database, with Python-based CLI interface for adding new incidents and a PostgreSQL backend

Purdue University

Position Teaching Assistant
Location West Lafayette, Indiana
Duration Jan. 2006 - Apr. 2006

Assisted in the grading and lab proctoring for the C Programming for Engineers course that is offered at Purdue.

²<http://www.rcac.purdue.edu/>

Bethel College

Position Database programmer
Location Mishawaka, Indiana
Duration 2003 - 2004

Crafted reports for Admissions Office, Registrar, Nurse, and Student Services. This involved using the INFORMIX database on an HP-UX system.

Research Experience

Purdue University

Type Undergraduate research
Duration Fall 2007
Supervisor Suresh Jagannathan

Updated the Kali branch of Scheme 48³ with the latest development changes and implement additional functionality, as specified by my supervisor.

- λ Used placeholder variables to cause a command to wait until a particular state in another thread has been reached.
- λ Changed code to use a more up-to-date conditions library.

Free / Open Source Software

- Contributed code and documentation to the `git` version control system
- λ Contributed code to Emacs
- λ Maintained Emacs Muse⁴, a text publishing mode for Emacs which aims for inclusion in Emacs
- λ Was release manager for ERC⁵, an IRC client that is part of Emacs
- λ Maintained EMMS⁶, a music player for Emacs
- λ Contributed to Planner Mode⁷, a TODO list manager and life organizer for Emacs
- λ Contributed to DVC⁸, an interface for using distributed version control systems with Emacs.
- λ Contributed to ErBot⁹, an IRC bot that runs in Emacs

³<http://s48.org/>

⁴<http://mwolson.org/projects/EmacsMuse.html>

⁵<http://www.emacswiki.org/cgi-bin/wiki/ERC>

⁶<http://www.gnu.org/software/emms/>

⁷<http://www.emacswiki.org/cgi-bin/wiki/PlannerMode>

⁸<http://download.gna.org/dvc>

⁹<http://www.emacswiki.org/cgi-bin/wiki/ErBot>

Git

- Contributed patch for `git-svn` to support excluding troublesome branches and tags by regexp pattern; it is in git v1.7.8
- Provided several small documentation updates

Emacs

- λ Adapted existing transaction queue code (`lisp/tq.el`) so that it sends input only when the server process is ready for it
- λ Added an IRC client to Emacs (ERC), and continue to code-review patches for it

Emacs Muse

- λ Wrote the TexInfo manual for Muse
- λ Implemented context-dependent escaping of special characters
- λ Built simple and effective interfaces for customization of software options
- λ Resolved file links across “project” boundaries
- λ Used regular expressions to render documents from syntax in place
- λ Interoperated with external packages that provide spell-checking and other features
- λ Wrote code to nest several types of lists according to level of indentation

EMMS

Added support for MusicPD¹⁰ in EMMS, which involved the following.

- λ Sync contents of EMMS playlist to MusicPD, and vice versa
- λ Wrote a timer function to detect song change and change of playlist
- λ Wrote code to retrieve track metadata
- λ Implemented a send-command interface using closures and callbacks
- λ Caused the description for each track in the current playlist to be updated in an asynchronous manner

ErBot

- λ Fixed stack overflow exploits
- λ Fixed arbitrary execution of code exploits
- λ Analyzed binary tree data for safe evaluation

¹⁰<http://musicpd.org>

Affiliations

- Member of Hike the Geek Los Angeles
- Associate Member of the Free Software Foundation since 2004
- Founding member of the Ubuntu-elisp group on `launchpad.net`
- Webmaster of the Purdue Linux Users Group¹¹ 2004–2007
- Vice President of the Purdue Linux Users Group 2005–2007
- Member of Purdue Non-theists Society
- Member of Purdue Anime Club
- Member of IEEE Computer Society
- Founded the Bethel College Linux Users Group

¹¹<http://purduelug.org/>