

Zhen Elizabeth Fong

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Objective:

To obtain a senior role involving systems administration and software engineering in a fast-paced (but not frantic), challenging, multidisciplinary, and large-scale environment.

Skills: (key: use/administer daily; proficient)

- Programming languages: **Java, Python, shell script, Javascript**, PHP, Perl, C, C++, Haskell, Mathematica
- Markup languages and web technologies: **XHTML, CSS, GWT, AJAX, XML-RPC**, XML/XSLT
- Operating systems: **Linux (Ubuntu, Debian)**, Windows (95-2000, ME, Vista, XP/2003 Server), Mac OS X, OS X Server, Cisco IOS; Gentoo/Red Hat/Fedora Linux, FreeBSD
- Services/utilities: **Apache, grub, iptables, Kerberos, MySQL, OpenLDAP, OpenSSL, Perforce** (administration/use), **Postfix, RAID**, amavisd-new, AFS, Bind, Courier, CUPS, Dovecot, Jabber, mvnForum, MediaWiki, phpBB, Postgresql, pxelinux, Snort, SpamAssassin, Splunk, Subversion/SVK
- Administration: **project management, inventory management**, software contract negotiation

Work Experience:

- **Site Reliability Engineer** [Google \(www.google.com\)](http://www.google.com) *Jan 2008-present*
 - Provided on-call support for 10+ internal applications key to Google's employee productivity.
 - Led team disaster preparedness, privacy/security, and Sarbanes-Oxley compliance efforts.
 - Re-platformed legacy applications onto Google's cloud computing infrastructure to improve supportability.
 - Wrote tools to boost team productivity and give internal HR customers self-service, secure access to data.
- **Technical Operations Manager** [Three Rings Design \(www.threerings.net\)](http://www.threerings.net) *March 2005-Jan 2008*
 - Programmed new features and bugfixes in Java for *Puzzle Pirates* (<http://www.puzzlepirates.com>).
 - Oversaw cheat detection, ran log forensics, responded to downtime events on on-call basis.
 - Wrote in-game support ticket system and web support contact form integrated with account system.
 - Provided technical assistance to live support staff, moderated customer technical support forum.
 - Designed dynamic website architecture, spearheaded company's first web analytics initiative.
- **Student Researcher** [California Institute of Technology/Stanford](http://www.caltech.edu) *June 2006-August 2007*
 - Researched the function of *CLE9* (a putative member of the CLV gene family in *Arabidopsis thaliana*) in regulating stomatal development under summer research grants from the Caltech *Summer Undergraduate Research Fellowship* program and as part of independent biology research for credit during school year.
- **Lead Sysadmin** [Undergraduate Computer Science cluster \(www.ugcs.caltech.edu\)](http://www.ugcs.caltech.edu) *Feb 2006-Jan 2008*
 - Led complete overhaul of student volunteer-run UGCS computing cluster at Caltech.
 - Managed hardware/software purchases, oversaw planning/specification/grant writing.
 - Established network infrastructure including bridging, snort, VMPS; configured LDAP, OpenSSL CA, Apache, MediaWiki, Postfix; collaborated with other sysadmins on AFS file servers, Kerberos, BIND.
- **Student House Rep** [Information Management Systems and Services, Caltech](http://www.caltech.edu) *February 2006-Jan 2008*
 - Managed Dabney/Blacker house computer labs (XP/2003/Vista, OS X, Linux) and house web/file servers.
 - Provided technical support to students experiencing difficulties with campus network, e-mail, software.
- **Contract Software Engineer** [Demidec \(www.demidec.com\)](http://www.demidec.com) *June-Aug, 2005*
 - Planned and implemented testbank in PHP backed by MySQL to store ~30,000 flashcard quiz questions
 - Worked with UI designer to create interface for students to access testbank and share lists of questions.
- **Systems Administrator** [College Preparatory Mathematics \(www.cpm.org\)](http://www.cpm.org) *June-Aug, 2004 and 2005*
 - Set up and managed fileserver, backups, centralized printing, networking switches, laptop system images.
 - Provided all technical support for team of 30 math teachers preparing a textbook using Mac OS X 10.3-4, Word 2004, and MathType.
 - Authored calculator programs and Geometer's Sketchpad standalone Java applets included with textbook

Education:

- Sept 2005-Jan 2008 – undergraduate student at the California Institute of Technology (Pasadena, CA); completed 70% of a BA in Computer Science with significant coursework in Biology; transcript upon request

Open-source Software and Hosting Projects:

- **instructor of game design class** during 2008 Google Computer Science Summer Institute (<http://www.google.com/support/jobs/bin/static.py?page=landingpage.html&sid=cssi>) for minority college freshmen; program as a whole provided intensive computer science coaching to improve minority retention rates for CS programs. Students created games during 3 hour session using libraries I wrote/provided.
- author, **FlatExport MediaWiki extension** (<http://www.ctyalcove.org/~elizabeth/FlatExport.tar.gz>) – dumps pages and associated images from a given namespace into flat files that can be used in a high-traffic situation using SSI and yet remain easily edited and updated by users with no knowledge of HTML
- author, **AFS cgi-wrapper and php-wrapper** (<http://www.ugcs.caltech.edu/~elizabeth/cgi-wrapper>) allowing execution of CGI/PHP from user public directories with subset of user filesystem permissions.
- author, **bookswap** tool (<http://www.college-prep.org/bookswap>) – enables students at previous high school to sell their used textbooks to those taking the same classes the following year; written in 2005 and still in use
- author, **mvnForum post/thread read tracking** (<http://mvnforum.com/mvnforum/viewthread?thread=2729>)
- author, **experimental server clustering for Three Rings' game libraries**, enabling scaling past one server.
- **webhost** and maintainer, ctyalcove.org (online community of Center for Talented Youth Lancaster summer camp alumni created in 2003)
- maintainer, **Mailman-Reencrypt** (<http://elizabeth.caltech.edu/2007/05/14/mailman-reencrypt-009-prealpha>) – adopted orphaned Mailman extension (<http://sourceforge.net/projects/mmreencrypt/>) for encrypted mailing lists and updated for compatibility with Mailman 2.1.
- author, **hiptop-sdk-contrib** – wrote extensions to Danger's Java 1.4-based hiptop SDK to integrate Proguard for dead code removal, obfuscation, and optimization, and Retroweaver for use of Java 5 language features
- maintainer, **snark** (<http://www.threerings.net/code/snark>) – adopted orphaned Bittorrent Java library from <http://klomp.org/snark>; refactored to allow instantiation of simultaneous downloaders in one JVM, type safety.

Awards:

2005 National Merit Scholarship Semifinalist; 2005 AP Scholar with Distinction; member, Cum Laude Society

Goals:

I relish the challenge of crafting and nurturing complex software projects from start to finish, beginning with raw ideas and ending with refined, well-documented, stable, mature solutions. I love to sculpt systems that simplify the work that others need to accomplish. I enjoy having my labor enable thousands of people across the world to connect with each other. I appreciate being able to apply the full range of skills I have to problems and stretching the limits of my knowledge.

I've always taken initiative to organize efforts and to think outside the box when pinpointing potential problems and devising solutions. In general, I value a meritocratic, bottom-up environment in which team members independently propose ideas and influence final designs.

In my first major project at Three Rings, I created a unified support ticket system to handle customer petitions, complaints, and disciplinary actions from multiple game servers in order to ease the workload of the live support team, allowing for a 400% increase in customers/ticket volume with no additional support staff. My work with UGCS involved collaborating on the specifications/plans and leading a team of three other volunteers in building from scratch a full-featured academic computing cluster currently supporting 1,500 active users to replace an aging cluster whose original components dated to 1989. Since I started at Google a year ago, I have come up to speed extremely quickly and have already led multiple high-impact efforts within my team.

I believe I will be most productive where I can be involved in large-scale design, consistently learn new skills, and be involved in all facets of projects rather than confined to a single role; I'd like to avoid becoming a faceless drone or a cog in the machinery. While I currently am not actively pursuing opportunities outside of Google, please feel free to contact me outside of business hours or drop me an email if you think you have something that would be of interest to me.

References:

References are available upon request.