Karl Voelker

San Francisco, California

karl@karlv.net
http://karlv.net

Employment

Senior Software Engineer, Plum, Remote　　　　　Oct. 2015–Oct. 2022
- Built backend embedded software for interactive touch-screen appliance
- Built on-appliance software for final in-factory quality testing
- Built cloud software for communication with appliances
- Built end-to-end software for over-the-air installation of updates onto appliances
- Built software for repeatable cloud deployments to AWS
- Built a variety of internal web apps and command-line tools
- Built next-gen microcontroller firmware in Rust
- Built automated tests for large portions of Python and Rust codebases
- Applied static typing to Python code with PEP 484 annotations
- Maintained embedded Linux OS built with Yocto
- Maintained firmware for embedded PIC microcontrollers
- Collaborated on product requirements, long-term planning, issue-tracking, and hiring processes
- Used Python, SQL (Postgres), Rust, C, PIC Assembly, JavaScript (with React and Redux), AWS, Terraform, Docker

Software Engineer, SmugMug, Mountain View, CA　　　Oct. 2013–Oct. 2015
- *Lead engineer* on the SmugMug API
- Built new features according to the needs of a wide variety of API consumers
- Performed maintenance and security audits
- Built an extensive suite of automated tests and an API testing framework
- Guided the public launch of a new API version
- Assisted internal and external developers with their use of the API

Software Development Engineer II, Lab126, Cupertino, CA Oct. 2012–Sep. 2013
- *Tech lead*, Kindle Fire web application platform
- Provided technical leadership to a team of four engineers
- Designed and implemented a new application platform
- Worked with customers, architects, and managers on requirements and design

Software Development Engineer, Lab126, Cupertino, CA　　Aug. 2011–Sep. 2012
- Kindle e-reader platform generalist
- Shipped Kindle Touch and Kindle Paperwhite
- Proposed and implemented UI overhaul for Paperwhite release
- Designed and implemented additions to UI platform API
- Worked on boot, wifi configuration, system toolbars, and window layout
- Created a UI interaction-testing framework

Research Assistant, UW–Madison, Madison, WI　　　　Aug. 2010–Aug. 2011

Software Engineer Intern, Microsoft, Redmond, WA　　　May 2009–Aug. 2009

Software Engineering Intern, Truviso, Foster City, CA　　May 2008–Aug. 2008

Education	**University of Wisconsin–Madison**, Madison, WI, Fall 2010–Summer 2011
	Graduate student in the Dept. of Computer Sciences, programming languages group
	Rochester Institute of Technology, Rochester, NY, Fall 2005–Summer 2010
	Graduated Summer 2010 with **M.S. and B.S. in Computer Science**
	GPA 3.97; enrolled in Honors Program; National Merit Scholar
	M.S. Thesis: "Practical Programming with Total Functions" (http://pptf.karlv.net)
	Courses: algorithms, C.S. theory, cryptography, parallel computing, compilers
Skills	Python, Haskell, Rust, SQL, Postgres, JavaScript, React, Redux, AWS, C, C++, Java, Perl, Linux, PIC Assembly, HTTP, Git, JIRA
Projects	**Splitcent**, a bill tracker for debts between friends
	Argon, a declarative X11 window manager in Haskell