

Karl Voelker

San Francisco, California

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

- Employment**
- Senior Software Engineer**, Plum, Remote Oct. 2015–Oct. 2022
- *Tech lead and architect for all software engineering at Plum*
 - Built backend embedded software for interactive touch-screen appliance
 - Built cloud software for communication with appliances
 - Built internal app for remote support of appliances, minimizing CS escalations
 - Built software for repeatable cloud deployments to AWS ECS
 - Built end-to-end system for over-the-air installation of updates onto appliances
 - Built next-gen microcontroller firmware in Rust
 - Built extensive automated test suites across all parts of the product
 - Applied PEP 484 static typing to large Python codebases to improve code quality
 - Built LookML models for product data analytics in Looker
 - Built on-appliance software for final in-factory quality testing
 - Maintained embedded Linux OS built with Yocto
 - Maintained firmware for embedded PIC microcontrollers
 - Used Python, SQL (Postgres), LookML, 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 and extensive automated testing
 - Guided the public launch of a new API version
- 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
- Skills** Python, Haskell, Rust, SQL, Postgres, AWS, Looker & LookML, JavaScript (including React & Redux), C, Java, Linux, PIC assembly, HTTP, Git, JIRA

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