

# Karl Voelker

San Francisco, California

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Employment	<b>Senior Software Engineer</b> , Plum, Remote	Oct. 2015–Oct. 2022
	<ul style="list-style-type: none"><li>• Built backend embedded software for interactive touch-screen appliance</li><li>• Built on-appliance software for final in-factory quality testing</li><li>• Built cloud software for communication with appliances</li><li>• Built end-to-end software for over-the-air installation of updates onto appliances</li><li>• Built software for repeatable cloud deployments to AWS</li><li>• Built a variety of internal web apps and command-line tools</li><li>• Built next-gen microcontroller firmware in Rust</li><li>• Built automated tests for large portions of Python and Rust codebases</li><li>• Applied static typing to Python code with PEP 484 annotations</li><li>• Maintained embedded Linux OS built with Yocto</li><li>• Maintained firmware for embedded PIC microcontrollers</li><li>• Collaborated on product requirements, long-term planning, issue-tracking, and hiring processes</li><li>• Used Python, SQL (Postgres), Rust, C, PIC Assembly, JavaScript (with React and Redux), AWS, Terraform, Docker</li></ul>	
	<b>Software Engineer</b> , SmugMug, Mountain View, CA	Oct. 2013–Oct. 2015
	<ul style="list-style-type: none"><li>• <i>Lead engineer</i> on the SmugMug API</li><li>• Built new features according to the needs of a wide variety of API consumers</li><li>• Performed maintenance and security audits</li><li>• Built an extensive suite of automated tests and an API testing framework</li><li>• Guided the public launch of a new API version</li><li>• Assisted internal and external developers with their use of the API</li></ul>	
	<b>Software Development Engineer II</b> , Lab126, Cupertino, CA	Oct. 2012–Sep. 2013
	<ul style="list-style-type: none"><li>• <i>Tech lead</i>, Kindle Fire web application platform</li><li>• Provided technical leadership to a team of four engineers</li><li>• Designed and implemented a new application platform</li><li>• Worked with customers, architects, and managers on requirements and design</li></ul>	
	<b>Software Development Engineer</b> , Lab126, Cupertino, CA	Aug. 2011–Sep. 2012
	<ul style="list-style-type: none"><li>• Kindle e-reader platform generalist</li><li>• Shipped Kindle Touch and Kindle Paperwhite</li><li>• Proposed and implemented UI overhaul for Paperwhite release</li><li>• Designed and implemented additions to UI platform API</li><li>• Worked on boot, wifi configuration, system toolbars, and window layout</li><li>• Created a UI interaction-testing framework</li></ul>	
	<b>Research Assistant</b> , UW–Madison, Madison, WI	Aug. 2010–Aug. 2011
	<b>Software Engineer Intern</b> , Microsoft, Redmond, WA	May 2009–Aug. 2009
	<b>Software Engineering Intern</b> , Truviso, Foster City, CA	May 2008–Aug. 2008
Skills	Python, Haskell, Rust, SQL, Postgres, JavaScript, React, Redux, AWS, 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