

Matt Welsh

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Professional Summary

I am a computer scientist and technology leader with 20 years of experience as a professor, software engineer, and engineering director. I have a strong research background in distributed systems, networks, mobile computing, and embedded systems. I have designed and implemented large systems supporting more than a billion users, deployed wireless sensors on active volcanoes, and published more than 70 scientific papers. I enjoy working on the bleeding edge of technology and developing products to improve the lives of users all over the world.

Experience

Principal Engineer
Google, Inc.

Seattle, WA
June 2010-present

I lead the Chrome Mobile team in Seattle and Kirkland, with a focus on optimizing the web experience for users in emerging markets such as India, Indonesia, and sub-Saharan Africa. I started the team and grew it to more than 40 engineers. As a result of our team's work, we have grown Chrome to more than a billion users in emerging markets. Our work spans server-side and client-side technologies. Some of my team's projects include:

- Flywheel, a proxy service for compressing mobile web pages, in use by more than 650M users of Chrome, driving tens of billions of queries per day.
- Client-side optimizations to simplify page loading and rendering, using server hinting to tailor the optimizations for individual web pages.
- Adding capabilities to Chrome to enable downloading and prefetching of web content to enable users with intermittent connectivity to browse while offline.
- New browser features to help users discover new web content and more effectively multitask on small screens.

Professor of Computer Science
Harvard University

Cambridge, MA
July 2003 - July 2011

Led a research team of more than a dozen graduate students, postdocs, undergrads, and research staff focused on exploring the technology ramifications of tiny, embedded wireless sensors, with applications such as geological monitoring and healthcare.

- We developed new operating systems, network protocols, and programming models for networks of embedded, 8-bit microcontrollers with low-power radios.
- We evaluated our work through deep engagements with domain scientists, deploying sensor networks on two active volcanoes in Ecuador, on street lights throughout the city of Cambridge, and in lab tests for patients being treated for Parkinson's Disease.
- Taught undergraduate and graduate courses on Operating Systems, Computer Architecture, Distributed Systems, and Wireless Networking.
- Awarded tenure and promoted to full professor in 2010.

Senior Researcher
Intel Research

Berkeley, CA
August 2002 - July 2003

Following my PhD work at Berkeley, I spent a year at Intel Research, developing a new programming language and compiler chain for embedded wireless sensors, called NesC. This work was published in PLDI 2003, won the “most influential paper” award 10 years later, and has been cited more than 2500 times.

Skills

- I am an expert in operating systems, networks, wireless, mobile computing, and distributed systems, and have published and served on program committees for conferences in these areas.
- Long track record of driving successful technology projects, ranging from academic research efforts to multi-team projects supporting more than a billion users.
- Strong technical background in software development, fluent in Go, C++, C, Java, Python, and SQL, with extensive experience developing for Linux, Android, and mobile web platforms.
- Seasoned organizational leader with experience building, scaling, and reorganizing teams; mentoring and career development; managing performance and balancing engineering investments.
- Strong communication skills as an author of many scientific articles and books, as well as experience as a teacher, technical speaker, and mentor.
- I am passionate about leveraging technology to address humanitarian needs and improve the lives of people.

Education

Ph.D., Computer Science

UC Berkeley, December 2002

Thesis title: *An Architecture for Highly Concurrent, Well-Conditioned Internet Services*

My PhD thesis work pioneered SEDA, a new way of building scalable web servers that has since been adopted by Amazon, Google, and others.

Masters of Science, Computer Science

UC Berkeley, December 1999

Bachelor of Science, Computer Science

Cornell University, May 1996

Full academic CV with publication list is available at <https://www.mdw.la/mattwelsch-cv.pdf>