

Ted Logan

Embedded Software Engineer

ted.logan@gmail.com

Profile

Working as an embedded software engineer and a site reliability engineer gives me a unique perspective: the very big (Google's global production network) and the very little (billions of devices using Qualcomm Snapdragon chips). I'd like to remain working in embedded low-level software in C++ with the lessons I learned as an SRE: understanding large complicated systems at any scale.

Work Experience

Member of the Technical Staff

Rivos

2022-Present
Santa Clara, California

- Stealth-mode startup

Senior Software Engineer

Apple

2020-2022
Cupertino, California

- As part of the Thermal Management team in CoreOS, I support thermal control on Apple's products, including sensor telemetry, control loops, fan drivers, and power budgets from an embedded coprocessor on the M1 SOC
- Directly responsible ("DRI") for thermal control on M1 iMac and M1 Pro/M1 Max Macbook Pro
- Implemented device drivers for temperature and power sensors
- Debugged factory build test failures
- Supported internal tools for gathering and displaying thermal control and power telemetry
- Trained and mentored new team members

Senior Software Engineer, Site Reliability Engineer

Google

2016-2020
San Francisco, California (2016-2018)
Seattle, Washington (2018-2020)

- Ads SRE Pipe (2018-2020)
 - Part of a Tier II on-call rotation supporting Google Analytics
 - As part of the regular on-call rotation, took the pager once every 4 to 6 weeks, for twelve hours a day ("following the sun") for three or four consecutive days
 - Served as first point of escalation for the Google Analytics backend, supporting the databases and processing pipelines storing and processing website analytics data
 - Supported partner dev teams in developing and maintaining their Service Level Objectives (SLOs) to align their monitoring and alerting with customer experiences
 - Wrote production automation to manage copying Google Analytics data between multiple data centers to facilitate load balancing and resource management
- App Engine Serving SRE (2016-2018)
 - Part of a Tier I on-call rotation supporting App Engine, a major Cloud service serving more than 28 billion requests per day
 - As part of the regular on-call rotation, took the pager once every 6 to 8 weeks, for twelve hours a day for seven consecutive days, and was first point of escalation for the serving stack, in addition to managing regular rollouts
 - Served as incident commander and postmortem owner for multiple incidents

- Served as SRE liaison to the serving dev team, keeping them abreast on the operation of the service in production, and consulting on production-impacting software changes
- Rewrote the App Engine runtime rollout system, improving release velocity
- Hosted Wheel-of-Misfortune exercises to train team members

Staff Engineer 2011-2015
Senior Engineer 2008-2011
 Qualcomm Boulder, Colorado

- Modem Common Services team member (2013-2015)
 - Served as primary point-of-contact for a software module supporting crystal oscillator (XO) calibration, managing the daily operations of my team of one
 - Developed and deployed a new algorithm to calibrate the XO, enabling more-accurate frequency estimation leading to reduced network and GPS search time
 - Supported bringup of new Snapdragon modems, enabling XO factory calibration
 - Implemented and tested an improved algorithm for managing SAR (specific absorption of radiation) to ensure FCC and international regulatory compliance
 - Issued US Patent [9,622,187](#) for new SAR power-management approach
- UART driver team lead (2011-2013)
 - Served as team lead of a small device driver team supporting high-speed UART
 - Coordinated and assigned development activities across the team
 - Effectively managed a small team with a wide variety of skills and personalities
 - Supported HS-UART driver on proprietary RTOS, developing new features to support new hardware, triaging support requests, and fixing bugs
- Multiprocessor team member (2008-2011)
 - Supported the Shared Memory Driver (SMD), an interprocessor channel used for message-passing and data transmission on ARM-based Snapdragon smartphone chips
 - Triaged support requests using JTAG debugger and crash dumps and fixed bugs
 - Wrote a new interprocessor channel for the first multi-mode LTE chipset, and supported the entire SMD stack from pre-silicon to chip bringup through to customer releases
 - Ported SMD to Windows 8 on ARM, writing a new kernel-mode driver
 - Wrote WinDbg (Windows kernel debugger) plugin to debug SMD kernel driver

Software Engineer 2008
 Morphlix Boulder, Colorado

- Developed set-top box software for a Linux-based STB in C and C++
- Implemented MP4 container support for video playback

Software Engineer 2006-2008
 Solekai Systems Boulder, Colorado

- Developed, maintained, and verified satellite television set-top-box software on embedded Linux
- Wrote Linux kernel driver for a PCI device

Software Engineer 2003-2006
 Imaging Technology International Boulder, Colorado

- Developed and maintained user-level printer control software in C++
- Designed and built a real-time temperature control board using an 8-bit Atmel microcontroller

Education

Bachelor of Science in Computer Engineering

Walla Walla College

2002

College Place, Washington

- Designed and built a binary clock using an 8051 microcontroller
- Wrote a complete TCP/IP stack in C for an embedded 386