Michael Cousins

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Detail-oriented full-stack software engineer with over 10 years of experience. Passionate about shipping high-quality products, leading teams to solve complex problems thoughtfully, and improving my craft and the craft of those around me.

Work Experience

Viam   Platform for building and managing smart machines | 1 year

Software Engineer V — Feb 2024 to present
Software Engineer IV — Mar 2023 to Feb 2024

- Led a multi-team, multi-project effort to quickly and safely move Viam's main web app from a brittle proof-of-concept to a resilient, growth-ready multi-page SvelteKit app with well-defined testing and architectural strategies
- Completed Viam's switch to Playwright for E2E testing by writing our CI workflows and establishing best-practices through written documentation and PR reviews
- Worked closely with PMs and designers to establish lightweight milestone, ticket acceptance criteria, and stakeholder review processes to increase project velocity
- Skilled up software engineers of varying levels of experience on unit testing, end-to-end testing, continuous integration, and architectural best-practices

Opentrons   Open-source liquid handling robots for biologists | 5½ years

Software Engineer IV — Mar 2019 to Mar 2023
Software Engineer III — Mar 2018 to Mar 2019
Frontend Software Engineer — Aug 2017 to Mar 2018

- Led the Robot Services team as we designed, built, and shipped a reliability-focused rewrite of the OT-2 and Flex robots' control and workflow execution software, while keeping users' already functioning workflows intact
- Worked with my teams' embedded designers and product managers to deliver features and resolve our trickiest bugs
- Architected, developed, and maintained the Opentrons App, the Electron and React desktop app that controls the OT-2 and Flex robots
- Configured and maintained CI and deployment systems for multiple products across multiple languages, operating systems, and CI providers

Keen Home   Smart, connected HVAC products | 2¾ years

Senior Product Engineer — Jul 2015 to Jul 2017
Mechatronics Engineer — Nov 2014 to Jul 2015

- Rebuilt the Keen Home API's authentication and authorization systems, adding an OAuth frontend and backend for Amazon Alexa integration
- Designed and implemented hardware and software for assembly-line QC fixtures
- Created and managed Node.js-based production systems, tools, and tests

Wiley Cousins   Contract software & hardware engineering | 1¾ years

The "Cousins" half — Feb 2013 to Oct 2014

- Designed electronics and firmware for wearables and other connected products
- Created and taught a 12-week "Introduction to Circuits" class

Open-Source Projects

JS-DevTools/npm-publish

Maintainer   TypeScript | GitHub Actions

Deploys packages to npm from CI.
Took over as maintainer from author.
Used at Viam and by thousands of projects.

tracespace/tracespace

Creator   TypeScript | React | Vite

Printed circuit board viewer and libraries.
Renders fabrication (Gerber) files as SVG.
Used by various PCB manufacturers.

mcous/vitest-when

Creator   TypeScript | Vitest | Unit testing

Stubbing library for Vitest to make mocking more expressive and less error-prone.
Used at Viam and Opentrons for UI testing.

mcous/decoy

Creator   Python | Pytest | Unit testing

Mocking library that enforces best practices to guide architecture and reduce coupling.
Used at Opentrons to test core logic.

testing-library/svelte-testing-library

Contributor   JavaScript | Svelte | UI testing

De-facto standard Svelte testing utilities.
Fixed bugs, improved CI, updated docs, triaged issues, and prepared for Svelte 5.

Ask Me About

Languages

TypeScript and JavaScript
Python

Testing

Test-driven development
Automated end-to-end testing

Frontend

Scalable, testable application architecture
Component-based view libraries

Backend

HTTP API design
Event-driven architecture

Glue

Technical leadership and mentorship
Project management

Education

B.Sc. Mechanical Engineering

Conc. in intelligent mechanical systems
Northwestern University, class of 2012