

Aaron Eiche

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SUMMARY

Software engineer with 20 years of experience building the interface between software and physical systems — most recently the web tooling for a commercial robot fleet, and before that seven years as a lead engineer on in-vehicle infotainment at Jaguar Land Rover. Equally at home in a browser and on a microcontroller, with a small line of self-designed electronics hardware to show for the second half.

CORE SKILLS

Web · TypeScript, JavaScript, Node.js, React/Redux, Vue, Svelte, Vite, Ant Design, HTML5, CSS3/SASS, Electron, real-time interfaces, REST API design

Robotics · ROS 1 (ROS 2 evaluation), rosbridge, on-robot services, rosbag data, fleet and floor monitoring tooling, robot mapping and visualization interfaces

Embedded · C, C++, Qt/QML, 8-bit AVR and 32-bit ARM microcontrollers (RP2040, ESP32, CH32V), firmware, embedded Linux (Yocto), PlatformIO

Platform · Python, Django, AWS (EC2, RDS, Lambda, API Gateway), Docker, Git/GitHub, GitHub Actions, GitLab CI, PostgreSQL, MySQL, SQLite

PROFESSIONAL EXPERIENCE

Senior Robotics Software Engineer — Locus Robotics

October 2021 – September 2026 · Remote

Robot Software Team — built tools the company used to observe, map, and interface with a commercial fleet of autonomous mobile robots operating in live warehouse environments.

- Built the floor-monitoring tooling in the company's modern tool suite, streaming real-time robot position and floor-state telemetry from the fleet to the browser over WebSockets via rosbridge. This was the first time this sensor data was available in the modern suite, superseding the legacy visualization tool. Used by 150 people company-wide: the robotics software team, the hardware development team, and 100+ customer success staff. Also by marketing, sales, and executive team.
- Designed and delivered the company's first web-based mapping interface, replacing a workflow that had required desktop RViz and robotics expertise to operate. Shipped in 2024 as an Electron application for macOS and Linux; A second-generation browser-native version was in development through 2026.
- Wrote the on-robot services behind the tooling as well as the clients that consumed them: ROS services exposed over rosbridge, a file-hosting service for retrieving rosbag recordings from the robot, and a service that launched the mapping stack on demand. This replaced a workflow that had required SSHing into a robot and running a script by hand.
- Developed and validated tooling against live robot data and the company's in-house simulation environment, so tools could be built and tested without physical hardware.
- Introduced front-end testing to the team's process, extended existing CI workflows to run automated tests, and wrote custom CI for the mapping project.
- Worked directly with customer success staff to diagnose a floor-setup problem generating tens of thousands of queue points per site and degrading path planning. Scoped which fixes belonged in tooling versus robot software, then cut required queue points by an order of magnitude and setup time from 20-30 minutes per aisle to a couple of minutes.
- Worked across robotics, hardware, and platform teams to expose the underlying feature data this tooling depended on while preserving the existing security model.
- Ran ROS 2 evaluation experiments to scope the migration work the tooling surface would require.
- Stack: React, Ant Design, and Vite on the front end; Django backend deployed on AWS. Python and rosbridge on the robot side. Primarily ROS 1.

Lead Software Engineer — Jaguar Land Rover

March 2014 – October 2021 · Portland, OR

Led a team developing and delivering production infotainment software for Jaguar and Land Rover vehicles, across Yocto-based open-source and proprietary automotive platforms.

- Led a team delivering production in-vehicle infotainment applications end to end. From concept, interaction design, implementation, through to delivery. Shipped Third-Party Sign-in, Weather, News, Media Playback, HVAC, Sports, and Download Manager using web technologies (HTML5, JavaScript, CSS3) alongside native Qt and QML.
- Designed and implemented prototype Remote Vehicle Interaction (RVI) APIs for remote HVAC control.
- Conceived and built an Amazon Echo demonstrator controlling vehicle HVAC, convertible top, and door locks. Concept to working demo in one week.
- Established the team's engineering practice: introduced version control workflows and code review methodology, and ran bi-weekly team instructional sessions including topics such as TDD/BDD, software patterns, and functional programming.
- Led development of an internal vehicle-sharing web application and its REST API in Node.js; built internal asset management tooling on Express, PostgreSQL, and Vue. Ran rapid interface prototyping for design review, turning functional designs around in under two weeks.

UI Engineer — Act-On Software

October 2013 – February 2014 · Beaverton, OR

- Migrated legacy integrated JSP pages to a clean separation of view and model, moving the application to HTML and AJAX-populated displays.

Web Developer (Contract) — CMD / Jive Software

March – September 2013 · Portland, OR

- Built a cancer-research fundraising sweepstakes platform: MySQL backend with duplicate-entry and abuse-prevention logic, and a dynamic filtering and sorting front end coordinating state between JavaScript and PHP. Contributed to a corporate rebrand spanning third-party services including NASDAQ and Jobvite.

Technical Consultant — Huron Consulting Group

July 2011 – March 2013 · Beaverton, OR

- Built a web interface for requesting and retrieving sensitive patient medical data between research facility systems, parsing XML into custom structures for editing, and custom logic for government insurance compliance notification.

Further roles available on request.

HARDWARE PRODUCTS & OPEN SOURCE

Conductive Resistance — Owner · 2010–present

Designs, manufactures, and sells a line of Simple Add-On (SAO) electronics badge hardware. Owns the full path from schematic capture and PCB layout through firmware, in-house SMT assembly, fulfillment, and support. Sold direct at conferences, through the Uberflux badge-hardware marketplace, and via resellers. Also built an instructional circuit simulator in HTML5 Canvas.

- **MacSAO** — classic-Macintosh-shaped add-on; C firmware plus a TypeScript companion site. Documented on Hackaday.io.
- **GameboySAO** — handheld-console-inspired add-on driving a 0.85" SPI LCD.
- **LazerTagSAO** — Interactive add-on replicates the scoring mechanism of the classic home-game.

Other work

- **Do Want** — open-source web gift registry. Lead developer, object-oriented PHP API with a JavaScript front end.
- Additional embedded and firmware projects: DreamDeck, Avalon keyboard, iPodSAO, pico-epaper. 67 public repositories. Arctic Code Vault contributor. Also writes 6502 assembly, including for the NES.

EDUCATION

B.S. Software Engineering, Brigham Young University Idaho — 2020

A.S. General Studies, Salt Lake Community College — 2008