

Adam Raine

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Skills

- **Languages:** TypeScript, JavaScript, HTML, CSS, C++, C, Python, Java, SQL
- **Framework experience:** React, Preact, Lit, Android SDK
- **Other experience:** Node, Chrome Extensions, Gemini API, puppeteer, git, Linux, Docker, Google Cloud, Firebase, Chrome DevTools protocol

Work Experience

Google – Senior Software Engineer (San Francisco, CA)

June 2020 – Current

- Lead the Lighthouse core team responsible for developing web page auditing tools that measure Core Web Vitals (CWV) and provide insights on performance, accessibility, and SEO.
- Contributed to Lighthouse, Google Chrome, Chrome DevTools and PageSpeed Insights.
- Published documentation, blog posts, and release notes on web.dev and developer.chrome.com.
- Implemented new insights in the DevTools performance panel combining the actionable advice of Lighthouse with the detailed performance breakdown of a flame chart.
- Implemented the new starting view in the DevTools performance panel that continuously measures performance metrics and contextualizes them with real user data from the Chrome UX Report (CrUX).
- Implemented the Lighthouse user flows API and report UI to audit web pages beyond the initial page load.
- Implemented a Lighthouse audit to determine back/forward cache eligibility, one of the top recommendations for improving CWV.
- Implemented a Lighthouse audit to analyze CSP strictness, and implemented a strict CSP on web.dev to mitigate XSS attacks.
- Developed a performance insight prioritization algorithm that simulated the performance metric improvement for each insight.
- Restructured Lighthouse codebase to export TypeScript declarations, enabling users to easily consume the Lighthouse API with type checking.

Google – Software Engineering Intern (Waterloo, ON)

May 2019 – August 2019

- Individual contributor on the Chrome Animations team working on CSS Paint.
- Developed a solution to prevent main thread bottlenecks from impacting color animations by running color animations on a separate thread.

Bosch Automotive – Embedded Software Intern (Farmington Hills, MI)

May 2018 – August 2018

- Contributed to engine controller software used in Ford vehicles.
- Developed tests for sending analog signals to solenoids and starter motor fault detection circuits.

Education

University of Michigan

September 2016 – April 2020

- Computer Science BSE, College of Engineering **GPA: 3.88**
- **Relevant coursework:** Conversational AI, Computer Vision, Web Systems, Operating Systems, Database Management Systems, Computer Security, Data Structures and Algorithms.

Citizenship

FIRST Robotics – Team 2834 Captain, Lead Programmer, Alumnus

January 2012 – Current

- Programmed team-built robots to respond to user input and operate autonomously.
- Tuned PID controllers on digital sensors and processed visual input from camera feeds.
- Lead team meetings every week and mentored new team members.
- Volunteered at FIRST events and participated in FIRST networking.

UM::Autonomy – AI Team

September 2016 – January 2017

- Member of the sub team responsible for developing software to control the autonomous boat.
- Created a PID tuning application to improve accuracy of the boat's movement in simulation.