# Jacob (Jake) Johnston

Lead Software Engineer · Technical Lead, Applied AI

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## Summary

Hands-on technical lead with 10+ years building full-stack, data-rich applications in TypeScript, React, C# and .NET. I own architecture and technical roadmaps, turn them into well-sequenced tickets, review code, and coach developers while staying in the codebase every day. I have shipped GIS and work-order software for utilities, founded a software agency, and now lead technical work for JLR's Portland Innovation Squad. I use agentic coding tools every day and set the standards that keep AI-assisted code maintainable: tests as gates, independent review, and evals that measure real improvement.

## Core Skills

**Front end:** TypeScript, JavaScript, React, Redux, Angular, RxJS, NgRx, HTML, CSS/SCSS, progressive web apps, micro-frontends

**Back end and data:** C#, .NET, .NET Core, ASP.NET MVC, ASP.NET Web API, WPF, Node.js, Express, Python, SQL, Microsoft SQL Server, NoSQL, REST APIs, microservices, serverless

**Cloud and GIS:** Microsoft Azure, AWS (Lambda, Bedrock, CDK, S3, DynamoDB), Google Cloud Platform, Firebase, Esri ArcGIS, Leaflet

**Agentic engineering and AI:** Claude Code, OpenAI Codex, Kiro, GitHub Copilot, prompt and context engineering, LLM evaluation (LLM-as-judge), RAG, Model Context Protocol (MCP), multi-agent orchestration

**Quality and delivery:** automated testing (Vitest, Playwright, React Testing Library), test strategy, code review, CI/CD (GitLab), deployment pipelines, reliability and performance, observability, operational documentation

**Leadership:** technical leadership, architecture ownership, technical roadmap, production readiness, sequencing and dependencies, communicating tradeoffs, building consensus, mentoring, hiring, Agile, Scrum, Kanban, Jira

## Experience

### JLR (Jaguar Land Rover) — Portland, Oregon (remote) — May 2023 – Present

#### Senior Software Engineer · Technical Lead, Innovation Squad — Mar 2026 – Present

- Technical lead for the Portland office's AI-focused Innovation Squad. I scope proofs of concept, set technical direction, and turn spikes into clear go/no-go recommendations for leadership.
- Designed the squad's evaluation system for conversational AI: LLM-as-judge benchmarks and test harnesses that show whether a non-deterministic assistant is actually improving. First use: a context-continuity pipeline that lifted recall from 0 to 2.67 out of 3.
- Led agentic development practice across the engineering chapter. Built an OpenAI-compatible API layer over the Kiro CLI and taught it in a chapter talk, "Kiro, but not for coding". Other teams adopted the practices.

#### Senior Software Engineer · Technical Lead, DesignOps — Jun 2024 – Mar 2026

- Became JLR's lead for Figma plugin development. Brought together separate plugin teams across global sites and introduced source control, code review and release practice where many had none.
- Set the plugin engineering standards, including development, staging and production isolation that Figma doesn't natively support, and shipped an automated changelog widget on that foundation (TypeScript).
- Led a prove-out of Google's Automotive DesignCompose for a rear-seat entertainment interface (Kotlin, Jetpack Compose, Android Automotive), ending in a design-to-code decision report and scorecard.
- Surfaced serious quality risks in a vendor's infotainment codebase and took the evidence to engineering leadership and the business.

#### Senior Software Engineer, Voice & Conversational AI — May 2023 – Jun 2024

- Kept a top-rated production Alexa skill for connected-vehicle commands healthy. Wrote its maintenance plan and broke it into tracked work: pipeline and test audits, weekly automated dialog tests in GitLab CI, and quarterly regression checks.
- Helped pioneer JLR's agentic voice assistant work. Built a multi-LLM RAG assistant over vehicle handbook content (AWS Bedrock, Kendra, CDK), an approach other teams adopted.
- Designed brand-specific assistant personas for JLR's house of brands, adopted by JLR's global NLP innovation group.

### Kingsmen Digital Ventures — Irvine, California — Jun 2022 – Nov 2022

#### Lead Software Engineer

- Led engineering on a six-person team building tools for pharmaceutical and medical clients, where software has to satisfy regulators and medical-data security reviews as well as its users.
- Built back-end integrations with third-party APIs on AWS Lambda (Node.js, TypeScript, service-oriented architecture) and a stateless React micro-frontend that calculates syringe volumes for drug administration. Reviewed code and mentored engineers.

### Synxite Portland, Oregon — Oct 2021 – Jun 2022

**Co-founder and Principal Software Engineer** (part-time)

- Co-founded a startup with a crane-inspection expert turned developer to bring a paper-heavy trade online.
- Architected Crane Inspector, a progressive web app for crane inspectors and the companies that hire them, and wrote most of it from prototype to beta, including typo-tolerant full-text search so records turn up even when misspelled (Angular, NgRx, RxJS, Firebase, Algolia).

### Flight Portland, Oregon — Nov 2016 – Oct 2021

**Founder, Principal Software Engineer and Engineering Manager**

- Grew a freelance practice built on repeat and referral work into a boutique software and design agency with teams of 3–7.
- Served as architect, principal developer or engineering manager on every project, mostly startups in GIS and mapping, social platforms and marketplaces, and coached founders as a fractional CTO. Clients included TerraSpatial Technologies, BIM Earth, VIN Voyager, AgileCore and Alchemy Code Lab.
- **Lead Software Engineer, TerraSpatial Technologies** (Jun 2017 – Nov 2017): brought in after the original developers left a nearly finished GIS and work-order platform used by municipal utilities and rural electric cooperatives. Reverse-engineered the legacy code, hired two developers, supported utilities moving their data into Esri ArcGIS, delivered to the first clients, and advised the company president on product direction (C#, ASP.NET, WPF, SQL Server, AngularJS, Leaflet).
- **Software Engineering Manager, Alchemy Code Lab** (Jan 2019 – Jul 2019): turned code-school graduates into a working agency team. Managed 4–8 engineers on real client projects (React, React Native, Node.js, MongoDB, Firebase) with a flexible Kanban that kept priorities moving and gave people room to grow.

### On Demand Analysis Hood River, Oregon — Mar 2016 – Nov 2016

**Full Stack Developer**

- In my first full-time programming job, paired Angular 2 with ASP.NET before the two worked together out of the box, building two new .NET Core and Angular applications for oil, apparel and non-profit clients.
- Modernized legacy ASP.NET MVC and WebForms applications with the DBA (C#, .NET Web API, Razor, SQL Server, Azure). Freelanced alongside it from 2014, including reviving a large Windows GIS and work-order platform (WPF).

### Earlier: Data Analytics and Automation — 2012 – 2015

- **Intel**, Automations Specialist / Data Scientist (2015): led a small team that matched Intel's lab-equipment inventory to its financial records, fuzzy-matching millions of rows into dashboards for global executive meetings. Turned down a contract extension to become a full-time programmer.
- **Nike**, Reporting Analyst (2015): automated margin-planning reports for the global footwear team, turning hours of work into minutes for about 20 analysts (C#, VBA, SQL, Access).
- **Astronic EMS**, Procurement Planner / Systems Analyst (2012 – 2014): wrote data-mining automations that cut turnkey material costs 15% and a quoting dashboard that made quoting about 30% faster, for aerospace, medical and federal defense customers.

## Independent Work

### Quasar, a multi-agent engineering platform — Mar 2026 – Present

- Designed and run a platform that orchestrates Claude Code, Codex and other coding agents, with model routing, scheduled agent work and a sandboxed tool host. About 165,000 lines of TypeScript and React on Node.js, with 700+ automated test files.
- Built agent-first under explicit standards: isolated Git worktrees, typecheck, lint and test gates on every release, adversarial review by a second model, and human-released deploys.
- Grew out of **Project Exocortex** (Dec 2025 – Mar 2026), an AI-first notes app with layered, undoable memory shared by user and AI: two versions in two months (React, Next.js, Firebase, Playwright), 630+ commits, about 40% by coding agents under my review.

### ScatterSchool and CoSourcery, an open learning platform — 2015 – 2021

- Created an open-source learning platform blending a wiki, version control and tutoring: versioned articles, community-voted edit suggestions and contributor attribution (Angular, Firebase, Algolia, Angular Universal). Built with Flight's interns over 2,400+ commits; live at cosourcery.com in 2020–21.

### Maker projects — 2018 – 2025

- **Fingertips:** a thumb-on-finger chord keyboard (12 segments), from capacitive pads to USB keyboard in three weeks (C++, CircuitPython).
- **Modular 3D-printed drums:** threaded shells and Helmholtz-resonator bass chambers, over about 37 design iterations.
- **Aquatic plant-root filter:** an emersed plant sump with a 3D-printed hydrocyclone, rebuilt over about 12 printed versions.

## Education

**B.B.A., Entrepreneurship · California State University, Fullerton**
Plus computer science, math, statistics and biology coursework.

## Community

Volunteer, Hoyt Arboretum, Portland (2014 – Present)