

Daniel C. Richardson

Staff Applied AI & Platform Engineer

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Summary

Staff Applied AI & Platform Engineer and technical lead. 30 years shipping production software across manufacturing, aerospace, logistics, wearables, and clinical diagnostics, the last six months operationalizing agentic development into shipped products. Before that I led teams and delivered AI and machine learning inside HIPAA and FDA regulated environments. I want to do that inside a team.

Technical Skills

AI, agentic development, and ML LLM orchestration, AI agents, agentic workflows, prompt engineering, RAG, cost-aware model selection, spec-driven generation, evaluation and review discipline, HIPAA-compliant LLM deployment, Claude and OpenAI APIs, clustering, random forests.

Languages Written cold: C#/.NET, SQL, Python, TypeScript, JavaScript. Shipped agent-assisted, and I architect, direct, review, and debug all of it: Swift, Kotlin, C++, Go, PHP.

Platforms and data .NET native AOT, React, Astro, Node, WPF/XAML, Xamarin, QT/QML, Cloudflare Workers, Azure, microservices, GitHub Actions, SQL Server, PostgreSQL, MongoDB, Snowflake, Redis, Entity Framework, Power BI, Tableau.

Leadership and regulated environments Technical leadership, mentoring developers, code review, managing contractors, defining SDLC practices, stakeholder discovery, legacy modernization. HIPAA healthcare, FDA medical devices, FAA and ITAR aviation.

Professional Experience

Founder and Principal Engineer | Throughline Technical Services LLC

January 2026 - Present - Independent software practice. Applied AI, agentic development, and delivery.

- Shipped a suite of production software solo, directing AI coding agents through spec, architecture, implementation, and review. I read, review, and debug everything that ships.
- Built Latticeflow, a .NET native AOT CLI driving AI coding agents through a deterministic plan, implement, review, ship workflow. Gate provers verify a passing check can fail, so a vacuous test never reads as confidence. Cut agent-driven cost by roughly 10x.
- Analyzed token cost against model choice and prompt structure; the whole stack runs on about two dollars a month.
- Built native iOS, native Android, and web clients against one shared wire contract for a peer-to-peer lending product, including on-device AI for camera-based cataloging. Submitted to the App Store and Play Store, in review.

Technical Lead - Systems Modernization | ZRT Laboratory

February 2025 - January 2026 - Clinical diagnostics laboratory. HIPAA-regulated.

- Designed a generative-AI intake pipeline for receiving: HIPAA-compliant image classification, OCR, and LLM extraction from clinical documents, scoped to move manual transcribers up into quality assurance. Two-month rollout against a multi-year alternative.
- Internal consultant to the Director of IT on modernizing a bespoke, hand-rolled Visual Basic and C# stack. Owned the assessment and the plan, managed the outside specialists who executed it, and defined SDLC practices.
- Led reporting and data unification across accounting, shipping, receiving, and research, groups that did not share data with each other. Built extraction tooling that cut researcher post-processing from weeks to days, and applied machine learning to clinical hormone datasets.

Senior Software Engineer - Technical Lead | LiquidWire

March 2023 - September 2024 - Wearable technology. Early-stage hardware startup.

- Architected and wrote the core C#/.NET software for Bluetooth cloud-connected clothing, owning communication and system integration.
- Owned a high-risk VR product initiative at a company of fewer than 20 people: set strategy, mapped dependencies, identified the critical path, and directed two contractors. Shipped on time with the stretch goals intact, in an environment where requirements shifted daily.

Senior Software Engineer | OIA Global

June 2021 - March 2023 - Global logistics and freight forwarding.

- Modernized legacy .NET logistics software for a post-Covid supply chain at a \$1.3B freight forwarder with 60+ offices across 30+ countries, on an IT organization of five engineers, one QA, and one product owner.
- Implementation engineer on the company-wide Workday cutover, and built the systems moving data reliably between accounting, billing, and shipping. Mentored developers on enterprise practices and code quality.

Senior Software Engineer | Datto

October 2019 - January 2021 - Backup, disaster recovery, and security.

- Built bare-metal restore and ransomware-protection backup on a 12-engineer team inside Datto's BCDR division. A ransomware-hit machine went from dead to working in minutes, when instant virtualization was still uncommon in small business.
- Designed a system to apply security updates without disrupting active user operations, and ran down a long tail of esoteric defects across appliance hardware revisions under the heavy peer review disaster-recovery software demands.

Senior Software Engineer - Team Lead | Revelar

September 2016 - June 2019 - Medical device diagnostics. FDA-regulated.

- First software engineer on a breath-based diagnostic instrument measuring exhaled aldehydes as a marker of oxidative stress. Built the software function from nothing and led a team of four across fluidics control, the instrument OS, and the web client.
- Architected the device-to-web seam: how an instrument in a clinic identifies itself, submits results, and keeps calibration state in sync. Carried the product from prototype to pre-production.
- Coordinated across electrical engineering, manufacturing, and chemistry, and negotiated interoperability agreements with the firmware and hardware teams under an FDA regulatory posture.

Senior Software Engineer | Jeppesen

August 2014 - September 2016 - Commercial aviation. FAA and ITAR regulated.

- Designed and developed C#/.NET flight routing software compliant with air traffic control regulations under FAA and ITAR constraints. Jeppesen was a Boeing subsidiary throughout my tenure.
- Paired with the product owner on "Route Snippets," letting routers assemble a flight from reusable partial routes.

Software Engineer | 4-Tell

2012 - 2014 - Ecommerce personalization and recommendations.

- Early engineer at a Portland ecommerce personalization startup serving retailers including Columbia Sportswear and SmartPak, later acquired by SearchSpring. Built the email recommendation path and the deliverability work that kept it out of spam filters.

Software Engineer | HydroLogics

2008 - 2012 - Water resource management for public utilities.

- Decision-support system for New York City's drinking water: 19 reservoirs and three controlled lakes across a 2,000-square-mile watershed serving nine million people, built with scientists and government stakeholders. Later acquired by Hazen & Sawyer.

EHS - Manufacturing and QA Engineer | Hewlett-Packard

1995 - 2005 - Consumer printer design and global manufacturing.

- HP DeskJet design and manufacturing, Voice of Customer. Led ergonomics and EHS programs across four international sites (Vancouver WA, Barcelona, Singapore, Mexico): assessed injury risk station by station and redesigned workstations.

Education

- **Master of Engineering**, Civil Engineering, Portland State University
- **Graduate coursework**, Industrial Engineering (Human Factors), Penn State University
- **Bachelor of Science**, Mechanical Engineering, Rochester Institute of Technology

Selected Work

Write-ups and live links at freepdx.com. Source at github.com/danrichardson.

- **Latticeflow** - deterministic CLI driving AI agents through plan, build, review, ship. .NET native AOT.
- **Johnny Solarseed** - two Home Assistant integrations on HACS, 19 releases, plus an LLM-backed utility-bill calculator. Python.
- **Loomwork** - open-source Astro publishing framework powering this site. Cloudflare Workers.
- **Sqzarr** - self-hosted GPU-accelerated media transcoder, single Go binary. React front end.
- **RemoteDeploy** - builds, signs, and serves an iOS app to any iPhone in about 10 seconds. Swift.