

Reza Kermani

Head of Software • Full-Stack, Cloud & AI Engineering Leader

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Professional Summary

Software engineering leader with four years at a fast-growing technology company, promoted from junior developer to Head of Software. Owns the full software platform end to end, from backend services and APIs through data pipelines and machine learning, up to web applications, cloud infrastructure, and CI/CD, and leads the engineering team that builds it. Joined when the company had no customers and helped grow it to five enterprise clients. Comfortable across the whole stack, from real-time and embedded software in C++ to Python backend services, TypeScript web applications, and AWS infrastructure, and an early, heavy adopter of AI-assisted development. Equally at home writing production code, setting technical direction, and working directly with customers and leadership.

Work Authorization

Canadian citizen eligible for the Spain-Canada Youth Mobility Visa (Category E): a pre-verified pathway to an immediate, 12-month open work permit inside Spain, with zero corporate sponsorship or labor market testing required.

Languages

English (native), Farsi (native), Spanish (beginner).

Technical Skills

Languages: Python, C++, TypeScript / JavaScript, SQL, Bash, C.

Backend & APIs: REST APIs, microservices, distributed and concurrent systems, real-time services, relational databases (SQL), telemetry & data processing.

Web & Frontend: React, Vite, Node.js, Svelte, TypeScript.

Cloud, DevOps & Infrastructure: AWS (EC2, S3, Lambda, RDS), Docker & Docker Compose, GitHub Actions CI/CD, infrastructure-as-code, multi-arch builds, Caddy, Cloudflare, Hetzner, Linux.

AI & Machine Learning: PyTorch, computer vision (object detection, segmentation, tracking), LLM integration (Claude), agentic / AI-assisted development, model deployment.

Robotics & Embedded: ROS 2, real-time control, sensor integration, NVIDIA Jetson / edge deployment.

Architecture & Practices: Platform & API design, configuration-driven systems, reusable / versioned libraries, observability & diagnostics, reproducible builds, performance optimization.

Leadership: Team leadership & hiring, mentoring, code review at scale, technical roadmap, agile delivery, customer & stakeholder communication.

Professional Experience

Optimotive Technologies

May 2022 – Present

Head of Software (Junior Developer → Software Developer → Head of Software, Oct 2024)

Own the end-to-end software platform (backend services, web applications, data, cloud, and CI/CD) for a company building autonomous inspection systems, while leading the engineering team and working across the business.

- Promoted from junior developer to **Head of Software** in roughly two and a half years; now split about 70% engineering leadership and mentoring with 30% hands-on development, leading a team of junior and mid-level developers, a co-op student, and an AI engineer, with bi-weekly sprint planning and daily standups.
- Helped scale the company from **zero to five enterprise customers**, turning an early-stage codebase into a configurable, production-ready platform serving multiple product variants, and turning customer field feedback into engineering priorities.

- Delivered an **automated data-capture application** to enterprise customers that replaced a manual, labor-intensive process, cutting their cost per unit by about 25% and running about 55% faster.
- Drove the platform's maturation from scattered single-purpose prototypes into **one configuration-driven platform**, with reusable subsystems extracted as versioned, packaged libraries, cutting duplication and making new deployments config-driven.
- Built a **closed-loop, AI-assisted development pipeline** in which an agent edits code, builds images, deploys, runs guarded automated tests, and iterates, and drove adoption of agentic coding across the team.
- Built **backend services and REST APIs** (Python) and the **TypeScript / React** web dashboard, deployed on **AWS** with Docker and GitHub Actions CI/CD, and validated behavior against the database with SQL.
- Built and owned **system-wide observability and diagnostics** used to detect regressions and root-cause failures, with an evidence-first approach: nothing is treated as fixed until proven against real data.
- Own **engineering standards and quality**: code review across the team, reproducible build and deployment, release management, and incident response.
- Hire, interview, and mentor engineers, set the technical roadmap and architecture, hold budget and purchasing authority, and work directly with customers, suppliers, and leadership.

Engineering Highlights

Platform & Architecture: Consolidated multiple prototypes into one configuration-driven platform serving every product variant, with reusable, versioned libraries and clean packaging.

Backend & APIs: Python services and REST APIs for real-time communication, telemetry, and data processing, validated against relational databases with SQL.

Web Applications & Dashboards: Real-time monitoring and control dashboards in React / TypeScript / Vite, plus magic-link administrative interfaces and live data streaming.

Cloud, DevOps & CI/CD: Multi-arch Docker images, GitHub Actions pipelines, infrastructure-as-code deployment on AWS behind Cloudflare, and a system-wide observability and diagnostics service.

AI & Machine Learning: Production computer vision (detection, segmentation, tracking) with PyTorch and an auto-labeling data pipeline, plus hands-on LLM integration and agentic, AI-assisted development.

Robotics & Real-Time Systems: Real-time control, perception, and multi-sensor integration for autonomous robots running on embedded Linux and NVIDIA Jetson hardware.

Selected Projects

arkov: independent web & infrastructure platform

- Designed and operate an end-to-end platform on self-managed cloud infrastructure (Hetzner, Caddy, Cloudflare, GitHub Actions IaC deployment): full-stack web applications, Stripe subscription billing, and administrative dashboards with content editing for non-technical users.
- Built an end-to-end automation pipeline integrating an LLM-based agent (Claude) with telephony (Twilio) and a consent-gated CRM and state machine, applying AI across a complete operational workflow.

Education

University of Toronto

2018 – 2022

Honours Bachelor of Science (B.Sc.), Computer Science Specialist, Minor in Mathematics and Statistics

Community & Activities

Software Mentor, FIRST Robotics Competition (Teams 4903 & 1229)

2022 – 2026

- Mentored students in software engineering, architecture, and version control, and served as a Provincial Judge at the 2024 Ontario competition; contributor to open-source software projects.