

# Adam Trail

**Principal Software Architect**  
Remote/Global, Calgary AB Canada

Principal Software Architect with 14+ years of experience driving business growth, risk reduction, and operational scale through high-performance distributed systems and global engineering leadership. Delivered platforms serving 5M+ users, managed globally distributed teams across 9 time zones, and led critical initiatives spanning fintech, data intelligence, workforce operations, and government contracting.

- **Strategic Leadership:** Technical Roadmapping, FinOps & Cloud Cost Optimization, Cross-Functional Crisis Management, Technical Hiring & Performance Architecture.
- **Architecture, Tooling:** High-Availability Systems, Distributed Data Pipelines, Multi-Database Modeling (SQL/NoSQL/Graph), LLM & RAG Frameworks.

## Key Career Highlights

- **B2G Revenue Enablement (Sayari):** Rapidly prototyped and delivered a compliant data access and sanitization layer within a rigid two-month deadline, successfully unlocking a high-stakes B2G government contract.
- **Strategic Crisis & Risk Resolution (Instant Lawns):** Partnered directly with corporate ownership to navigate a complex real estate litigation dispute through data synthesis and research, protecting corporate interests with a positive resolution.
- **Organizational Turnaround & Leadership (CENX):** Stepped into a team lead role to rescue a failing engineering unit, pushing left and building new interaction models to transform it into a high-performing team known for predictable, on-time execution.

## Professional Experience

**Strategic Technology Consultant:** Instant Lawns, Remote, Canada      Oct 2025 - Present

- Owned the full SDLC of a workforce management platform, delivering an ecosystem that digitized field operations for 50 employees (timesheet, calendar, vehicles, forms, IoT device control, tasks, chat, and GPS position reporting), reducing manual reporting.
- Replaced risky WhatsApp usage for 50 employees with a highly available, secure real-time messaging ecosystem utilizing Stream Chat, preventing intellectual property leaks, unifying field operations, and smoothing onboarding/offboarding. Synced core employee database records with chat infrastructure in realtime, used Firebase Cloud Messaging for reliable push notification pipelines, and S3 for media.
- Multiplied size and ease of access of employee knowledgebase, adding AI chat tools. De-noised email notifications with a custom LLM-powered email triage pipeline.

- Modernized tech monitoring and alerting with Sentry. Enabled HA using Cloudflare Load Balancing and Redis for leader election, which enabled zero-downtime deployments. Owned TypeScript/Node.js API server and integrations with AWS and GCP.
- Partnered directly with ownership to navigate complex real estate litigation; synthesized multi-modal data sources (text, audio, video) and conducted targeted research to build evidentiary frameworks and protect corporate interests with a positive resolution.
- Rebuilt corporate organizational structure along with ownership, wrote robust standard operating procedures (SOP), and established variable compensation matrices and technical hiring and performance standards.

**Principal Software Architect:** Sayari, Remote, Canada

Nov 2022 - Sep 2025

- Architected the core REST API and search/caching layer for a global corporate ownership, trade, and risk analysis platform, selecting high-performance database patterns (in PostgreSQL, Elasticsearch, Cassandra, Memgraph/Cypher) that reduced latency and emphasized observability. Used functional libraries.
- Directly managed 4 engineers in a fully-remote globally-distributed engineering team across 9 timezones. Informed product decisions and wrote development implementation plans. Requested and hired an excellent intern. Mentored several hires.
- Automated static code analysis, and advocated for high-ROI team processes and quality of life changes. Championed and built Elastic Cloud dashboards and alerting to prevent production outages and degraded graphile-worker queue throughput.
- Designed a fault-tolerant asynchronous ingestion pipeline processing millions of records daily from disparate databases into Elasticsearch, later migrating storage to Postgres.
- Spearheaded the rapid development of a data access and sanitization prototype within a rigid two-month deadline, unlocking a high-stakes B2G government contract.

**Staff Developer:** Steady Platform, Remote, Canada

Dec 2020 - Nov 2022

- Led technical architecture for a high-traffic fintech mobile application serving 5M+ members, deploying the React Native app for Android and iOS. Optimized reliability of critical Plaid integration, and built tools for devs and testers.
- Conceptualized and ran inaugural Engineering Hackathon (15 developers, 7 projects).

**Fractional Engineering Lead:** Tangible Trade, Remote, Canada

Jun 2019 - Dec 2020

- Added live camera workflows and 3D model rendering to a React Native mobile app at a semi-DTC orthodontics provider, using Hasura and a GraphQL backend.
- Added real-time delivery geo-tracking to a "lightning-fast" delivery app which managed and synced with the DoorDash API.
- Audited and reported on security vulnerabilities and other deficiencies.

**Senior Software Developer:** Spacious Technologies, New York, USA

Nov 2017 - Jun 2019

- Designed and developed full-stack features for pre-acquisition growth, including complex integrations with 3rd-party tools such as Stripe, Segment, Intercom, and Slack.
- Orchestrated a strategic backend migration from a legacy Node.js/Meteor/MongoDB backend to a scalable Clojure/Datomic architecture, including a new DevOps pipeline.
- Additional technologies: Apollo Engine, CircleCI, JavaScript, Elastic Beanstalk, Heroku.

**Senior Software Developer:** CENX, Ottawa, Canada Jul 2015 - Nov 2017

- Leveraged Clojure in a microservice environment to ingest and analyze massive telecom networks e.g. SD-WAN. Led team that built real-time fault ingestion backed by Cassandra, designing database schemas, race condition avoidance, and stable API contracts. Volunteered on the Joint Health & Safety Committee (JHSC).
- Additional technologies: Solr, Spark, ClojureScript, Camunda BPMN, real-time.

**Senior Software Developer:** SodaCard, Hong Kong Oct 2013 - Sep 2014

- Developed full-stack customer loyalty service with 100+ locations and 50k users.
- Increased reliability of location detection with cost-effective Wi-Fi hardware.

**Senior Systems Analyst:** NAV CANADA, Ottawa, Canada Mar 2012 - Jul 2013

- Implemented protocols for 18 critical airport and weather systems for the core data transfer component of a civil air navigation solution at the Hong Kong International Airport with over 30 servers and 150 user workstations, including in control towers.
- Obtained an Enhanced Reliability security clearance at the beginning of the term.
- Additional technologies: binary formats, dry wires, high definition RTSP camera feeds.

## Education

**Bachelor of Computer Science, with Honours:** Carleton University, Ottawa, Canada 2012

- Software Engineering stream with several geomatics and geography courses.

## Additional Technologies

- Django, Java, Ubuntu, Android, Python, Expo, Ruby on Rails, SQLite, MySQL, EC2, S3, SNS, BLE, iBeacon, Audio Beacons, ELK, AppsFlyer, MCP, RAG, Push Notifications, Deeplinking, Docker, Kubernetes, Linux/Unix, Google Play, Event-Driven Architecture.

## Personal Accomplishments

- Licensed pilot in Canada and USA, night rated. 2006 - Current