

Adam Drag

Senior Full-Stack Engineer - Cloud Platform & AI Systems

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PROFESSIONAL SUMMARY

Senior full-stack engineer, 11 years. One of two core engineers at a venture-backed startup, owning 9 production services end to end alongside the CEO and CTO. Shipped the platform's agentic AI assistant on AWS Bedrock and the usage-based billing that monetises it, cut AWS spend 25%, and moved the production fleet to ARM64 Graviton.

SKILLS

Programming Languages: TypeScript, JavaScript, Python, Java, SQL, VBA

Frontend: React 19, Redux, Zustand, Vite, Angular, Vue.js, Plate.js, Slate, Yjs (CRDT), IndexedDB, Dexie, Tauri, MDX

Backend & APIs: Node.js, GraphQL, Apollo, GraphQL Mesh federation, REST APIs, NestJS, Spring, Effect-TS, microservices, event-driven architecture, Server-Sent Events

Cloud & Infrastructure: AWS (ECS Fargate, Lambda, S3, SQS, EventBridge, CloudWatch, OpenSearch, Bedrock, Aurora Serverless, Graviton/ARM64, ALB, CloudFront), AWS CDK, infrastructure as code, Docker, Google Cloud Platform (GCP), LocalStack

Databases & Data: relational/SQL (PostgreSQL, Amazon Aurora Serverless, OracleSQL), NoSQL (MongoDB, DynamoDB, Redis), DuckDB, Apache Parquet, vector search (OpenSearch, Marqo)

AI & LLM: generative AI (GenAI), AWS Bedrock, Claude (Sonnet, Opus, Haiku), agentic AI, multi-tool agent loops, RAG (retrieval-augmented generation), prompt engineering (system-prompt design), model routing, prompt caching, token metering, LLM cost modelling, LLMOps, Vercel AI SDK, Claude Code

CI/CD & Observability: GitHub Actions, Jenkins, AWS CodeBuild/CodePipeline, Git, Datadog (APM, RUM), PostHog, Vitest, multi-architecture container builds

Practices: Distributed systems, system design, data structures & algorithms, DAG dependency resolution, local-first sync, Stripe billing, cloud cost optimisation (FinOps), incident response, mentoring, stakeholder communication, Agile Scrum

Spoken Languages: Polish (native), English (fluent, 3+ years working for Australian companies)

PROFESSIONAL EXPERIENCE

CalcTree

Full-Stack Engineer | Australia, remote | Dec 2023 - Present

Engineering calculation platform: reactive MDX documents with live, dependency-graph calculation blocks over MathJS, Python, and spreadsheets.

- Built the platform's agentic AI assistant end to end on AWS Bedrock: 13 tools over a 14-step agentic loop, a validation repair cycle, and prompt caching, with user-selectable models (Claude, Kimi, GLM).
- As the team's primary code reviewer, introduced AI-native development workflows with Claude Code: custom testing and domain-knowledge skills, plus automated PR review.
- Cut AWS spend 25% by decommissioning idle resources, retuning ECS Fargate autoscaling, right-sizing tasks against 30-day CloudWatch data, and migrating to Aurora Serverless PostgreSQL.
- Engineered the dataset pipeline: event-driven CSV to Apache Parquet conversion on S3 with DuckDB, plus Bedrock knowledge-base ingestion powering retrieval-augmented generation (RAG) over workspace documents.
- Shipped the user-facing usage-based billing that monetises the assistant: per-model per-token pricing across 5 models and 3 providers (Bedrock cost plus margin), Stripe metering, entitlements, trials, org budgets, and per-event rate snapshots.
- Migrated the production fleet to ARM64 Graviton Fargate (~20% cheaper compute), with multi-architecture amd64/arm64 Docker images built in GitHub Actions for zero-downtime rolling deploys.
- Owned observability and incident response: wired Datadog RUM/APM with source maps, diagnosed a webhook pile-up that OOM-killed the collaboration service, and cut prod log volume 97% on a 19.7 GB log group.
- Built the local-first React 19 frontend: an MDX rich-text editor (Plate.js) with math and spreadsheet blocks, Yjs CRDT collaboration, and cursor-based GraphQL sync into IndexedDB.
- Architected the calculation engine: a directed acyclic graph (DAG) over MathJS, sandboxed Python on AWS Lambda, and Parquet datasets, using dependency analysis to recompute only the statements downstream of a change.

- Removed per-request auth round-trips at the GraphQL gateway by verifying JWTs locally with per-workspace role claims, behind a fallback that cannot reject a valid token.
- Ported the platform to a Tauri desktop app, integrating over COM with Microsoft Excel and ETABS to read and write live engineering models.

Marqo

Software Engineer | Australia, remote | May 2023 - Dec 2023

- Built the automated billing and provisioning platform for a cloud-native vector database (vector search), deploying per-customer instances on AWS OpenSearch.
- Engineered a usage-metering pipeline aggregating AWS instance metrics every 15 minutes, wired into Stripe to automate usage-based invoicing.
- Automated provisioning and scaling of the managed vector search offering, removing manual steps from customer onboarding.

Winning Group

Software Engineer | Australia, remote | Nov 2022 - Apr 2023

- Built backend APIs and reporting services for the logistics performance team at Appliances Online, one of Australia's largest e-commerce retailers, tracking delivery KPIs nationwide.
- Maintained and optimised data aggregation systems giving operations visibility into nationwide delivery and fleet performance, under strict security and code-quality standards.

Capgemini

Senior Software Engineer | Wrocław, Poland | Jan 2018 - Sep 2022

- Principal developer on large-scale enterprise systems, owning architecture, framework selection, and design across multi-year client engagements.
- Led and mentored cross-functional teams of 2-4 engineers, accelerating delivery cycles and holding the team to Clean Code and software design standards.
- Built backend services in TypeScript and Java, and frontends in Angular, React, and Vue.js.

eurobank

Software Developer | Wrocław, Poland | Feb 2017 - Dec 2017

- Estimated, designed, and delivered client and server-side banking applications in an Agile Scrum team, maintaining quality through peer review.

Nokia

Software Developer | Wrocław, Poland | Jan 2015 - Feb 2017

- Full-stack developer on Nokia's private cloud platform: provisioned virtual machines, designed the Java and Node.js microservices running on them, and built the web frontends.
- Created and managed CI/CD pipelines, ran code reviews, and worked in Agile Scrum planning.

Kerry Ingredients & Flavours

System Administrator / Raw Material Call-Off | Oleśnica, Poland | Mar 2009 - Dec 2014

- Built standalone Java applications and Excel VBA automation that cut manual work in material call-off and production planning, and controlled stock levels, purchasing, and delivery planning.

PROJECTS

logistics-ts

Open source, MIT licensed | npmjs.com/package/logistics-ts | github.com/adam-drag/logistics-ts

- Author of a modular TypeScript supply-chain toolkit across 6 npm packages: demand forecasting with method auto-selection by MASE backtest, ABC/XYZ/FSN classification, safety stock, EOQ, and lot-sizing.
- Made every result explainable, returning the value with its method, inputs, reasoning, and citations so engineers and AI agents can audit the mathematics. ESM-only and dependency-light for Node, browser, edge, and Lambda.

EDUCATION

Wrocław University of Technology (Politechnika Wrocławska)

Bachelor of Science, Information Technology | Wrocław, Poland | Oct 2009 - Jul 2013

Wyrażam zgodę na przetwarzanie moich danych osobowych zawartych w dokumentach aplikacyjnych w celu prowadzenia rekrutacji na aplikowane przeze mnie stanowisko oraz w zakresie przyszłych procesów rekrutacyjnych.