

Josh Meads

Principal Engineer / Architect

Vancouver, BC, Canada · Pacific Time · US/Canada Remote
joshmeads.com · github.com/joshmeads · linkedin.com/in/joshmeads
work@joshmeads.com · +1 (778) 891 5545
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Profile

Hands-on Principal Engineer / Architect with 15+ years delivering products and platforms from client discovery and commercial estimation through architecture, implementation and production operation. Held architectural authority across 4–5 teams at Station Casinos; previously led agency engineering as Technical Director at Intergalactic. Combines distributed-systems, developer-platform, performance and security engineering with team development and commercial judgement. Quickly understands unfamiliar codebases and runtime trade-offs, simplifies inherited architectures and builds foundations that make other engineers more effective.

Core stack: TypeScript, Rust, Go; Node.js/Bun/Deno; React/Next.js; AWS/Azure; Kubernetes; Terraform/Pulumi.

Selected Impact

- **Commercial ownership and delivery at scale.** Won and led Intergalactic's largest engagement by contract value and team size: a Cisco virtual-event platform delivered in approximately three months, supporting approximately 30,000 concurrent users following a coordinated mass redirect from Cisco TV.
- **8 → 120 → 5,300 PDFs/s.** Replaced staff-mediated tax-form preparation with on-demand customer generation and direct ZIP delivery. Improved the TypeScript implementation, then shipped a Rust renderer benchmarked at 5,300 PDFs/s, removing the need for a separate document-storage and email-delivery workflow.
- **Faster, repeatable delivery across teams.** Established service foundations and tooling for developer bootstrap in under one minute and production hosting in under one hour, each in at most two commands. Coached teams through adoption and reduced complete CI/CD pipeline times by 25–50%.
- **AI adoption beyond individual productivity.** Built agent-assisted architecture/security review, engineering-standards checks, repository maintenance and test-gated upgrades; workflows were adopted by roughly half of engineering.
- **Security gaps beyond scanner findings.** Demonstrated escalation paths from root containers into Kubernetes management, cloud resources and secrets. Remediated the core path for new deployments and hardened CI/CD.

Experience

Oakling — Founder & Engineer

Sep 2026–Present

- Founded and built a daycare management and family-communication platform, shipping the first production release and onboarding its first customer in approximately two weeks.
- Delivered web and iPhone/iPad applications covering family chat and media sharing; attendance, profiles and pickup workflows; consent and forms; and food, sleep, medication and incident tracking.
- Owned product definition, architecture, backend and deployment. Used AI-assisted engineering workflows and integrated face detection and image inpainting into photo-editing workflows.

Independent AI Systems & Distributed Simulation R&D

Jan 2026–Present

Independent projects undertaken during a planned parental career break.

- Built an actively used coding/research agent harness with selective context loading, session rehydration, long-running orchestration, atomic task claiming, worktree-per-task parallelism, provider routing and sandboxed execution.
- Built a shared Bun/TypeScript hook layer for Claude Code and Codex with pre-tool guards, pre-compaction handoff and stop/evaluation gates. Combined automated checks, cross-model review and documentation updates before accepting work for a pull request.
- Built a working distributed GPU fluid-simulation engine. The planned next stage uses simulator-generated data to train ML surrogate models, aiming to reduce compute required per run.

Station Casinos — Architect

Jan 2024–Dec 2025 · Remote · Contract

Held architectural authority across 4–5 teams, approximately 30–50 engineers, in an Azure/Kubernetes environment. Worked with peer architects and senior leadership on technical direction, security and developer experience while remaining hands-on in implementation and production diagnosis.

- Established the required foundation for new services using Fastify, TypeBox and OpenTelemetry, replacing legacy NestJS/Express foundations. Reworked middleware, module loading and request-data handling, achieving approximately 50× framework/middleware throughput and 5× end-to-end throughput in representative services, with substantially lower CPU and memory use. Added health endpoints, event-loop pressure reporting, heap/RSS telemetry and updated security defaults.
- Built production TypeScript and Rust tax-form renderers. Increased TypeScript throughput from 8 to 120 PDFs/s by restructuring upstream data, rendering shared fields once and forking buffers per form. Exposed the Rust renderer through N-API as a reusable Node.js/Bun package. Direct ZIP streaming removed separate PDF storage, email delivery and signed-URL handling, reducing credential, networking and cross-team dependencies.
- Built an internal AI-assisted form-preparation tool combining LLM orchestration, machine-vision field detection, data-to-template mapping and human validation; customer-facing document rendering remained deterministic.
- Introduced agent-assisted engineering workflows across Claude Code, Codex, OpenCode and MCP: multi-agent architecture/security review, standards checks, repository maintenance, semver/changelog automation and test-gated package upgrades, with clear human ownership of generated changes.
- Redrew service boundaries around ownership, security, data and deployment fit. Removed duplicated database/API enrichment adding 500 ms–2 s per request; documented target architectures through C4 diagrams, ADRs, prototypes and implementation examples. Deferred broader event streaming until a justified use case existed.
- Standardised service-owned data, schemas at the edge, stricter TypeScript and repeatable project bootstrap. Coached engineers through 1:1s and organisation-wide sessions, using their own code to explain architectural reasoning, runtime internals and performance diagnosis.
- Demonstrated container-to-Kubernetes and cloud escalation paths involving excessive privileges and accessible secrets. Hardened new deployments through non-root containers, tighter CI and Azure permissions, and safer secret injection and scoping. Consolidated repeated PowerShell pipeline logic into a shared CLI with consistent caching and early exits.
- Designed and prototyped a single-source contract model to prevent drift between TypeScript and JSON Schema definitions. Proposed gRPC for synchronous intra-cluster calls and cluster-local NATS to replace AWS-hosted RabbitMQ serving Azure workloads; prototyped partitioned processing preserving per-user ordering.
- Prototyped Kubernetes modernisation using Istio Ambient mTLS, Envoy Gateway, Terraform and Argo canary/blue-green delivery. Identified five-figure monthly cost-reduction opportunities across 500+ over-reserved pods, internal APIM traffic, redundant firewalls and public routing of same-zone traffic.
- Diagnosed Azure SNAT exhaustion as the cause of a major production MongoDB outage in approximately one hour. Connected the failures to outbound connection pressure between Azure workloads and AWS-hosted Atlas; recommended moving Atlas to Azure with private connectivity to address the architectural cause.

Intergalactic Agency Inc.

Dec 2014–Dec 2023 · Vancouver, BC

Technical Director

Jan 2020–Dec 2023 · Hybrid

Led the agency's developers and held agency-wide technical review and approval. Owned commercial estimates and advised the Managing Director on company headcount, project staffing, compensation and personnel decisions. Served as the escalation point between engineering and project management and managed selected client relationships, including Cisco, while remaining hands-on.

- Won Cisco's virtual-event programme against an incumbent vendor and delivered it in approximately three months, leading 14 engineers/designers, two PMs and five partner organisations. Owned the client relationship, architecture and backend delivery; the programme became the agency's largest engagement by contract value and team size.
- Built Cisco's AWS estate as infrastructure as code using Pulumi and Terraform, with ECS, ALB/NLB, CloudFront and blue/green/canary delivery. Integrated Cisco TV, WebEx, Cvent and partner systems; brokered attendee authentication, issued platform-controlled sessions and proxied vendor-bound requests over trusted server-to-server connections.
- Led Station Casinos' player-asset platform from pitch, estimation and requirements through launch and maintenance, directing seven developers, a designer, a CG artist and a PM. Issued millions of assets with observed 99.9% production uptime, immutable audit logging, canary releases and automated rollback. Station subsequently engaged me directly.

- Interviewed, hired, onboarded and mentored engineers; handled performance concerns and contributed to termination decisions. Developed engineers' understanding of system internals and architectural trade-offs, aligning development opportunities with their chosen career direction.
- Oversaw a portfolio spanning web platforms, interactive installations, event systems and showroom experiences. Developed concepts with clients and translated them into commercial estimates and delivery plans; enterprise projects passed information-security reviews at Cisco, Palo Alto Networks and Microsoft.
- Built standardised project generators, CLIs and dependency checks to reduce setup work and improve consistency between engagements. Simplified bespoke Ansible/VM deployment workflows into Docker-based delivery on AWS ECS where the workload did not require custom infrastructure orchestration.

Lead Software Engineer

Jan 2018–Jan 2020

- Owned architecture and backend delivery for recurring Cisco events in Las Vegas, contributing to a five-year relationship spanning nine-plus events and a final virtual event. Led derivative event platforms for Palo Alto Networks, SAP, HPE, Microsoft and Dell.
- Optimised the National Film Board's interactive film through flamegraph-driven work across preloading, synchronisation, Three.js and mobile/browser execution. Reduced approximately one-second tap-to-play delays to effectively immediate playback; the project later received a Canadian Screen Award nomination.

Full Stack / Software Engineer

Dec 2014–Jan 2018

- Built high-traffic festival, campaign and brand platforms with CMS workflows, CDN delivery, ticketing integrations and immovable launch dates. Skookum Music Festival's launch served 1M+ unique visitors and 2 TB+ of traffic on day one.
- Maintained and extended BC Liquor Distribution Branch's production permit/licensing application in Ruby on Rails/MySQL from 2014–2016.
- Progressed into de facto technical leadership by 2016, before formal promotion to Lead Software Engineer.

Earlier Experience — Swift Studios Ltd & Freelance

2007–2014 • UK

Managing Director of Swift Studios Ltd; freelance developer, designer and VFX compositor. Earlier career combined software development, design, interactive work, visual effects and running a small studio.

Selected Skills

Primary languages: TypeScript/JavaScript, Rust, Go. **Additional:** Zig, Swift, Python.

JavaScript runtimes: Node.js, Bun, Deno.

Backend, data and messaging: Fastify, Express, REST/RPC, PostgreSQL, MongoDB, Redis, SurrealDB, RabbitMQ, NATS/JetStream, Kafka.

Cloud engineering: AWS and Azure across identity/IAM, networking, containers, serverless, storage, messaging and operations.

AWS (selected): IAM, ECS, EKS, Lambda, S3, CloudFront, ALB/NLB, SQS.

Azure (selected): AKS, Entra ID/Azure AD, RBAC, API Management, virtual networking.

Infrastructure and delivery: Kubernetes, Docker/Podman, Terraform, Pulumi, Argo, Azure DevOps, GitHub Actions, Linux.

Web and interactive systems: HTML/CSS, React, Next.js, server-side rendering, Web Workers, browser performance and media, WebGPU, WebGL, Three.js, WebAR, Unreal Engine.

AI and agent engineering: Claude Code, Codex, OpenCode, Pi, MCP, agent harnesses/hooks, context and memory systems, multi-agent review, test/evaluation gates, RAG/GraphRAG.

AI model foundations: Transformer architectures, model parameters and weights, pre-training and post-training principles.

Architecture, security and observability: C4/ADRs, service boundaries, OAuth2/OIDC, SAML/SSO, KYC identity, mTLS, secrets management, least privilege, adversarial testing, OpenTelemetry, performance profiling.

Embedded projects: Raspberry Pi Pico and Arduino-class microcontrollers; Python, C, Rust and Zig.

Engineering leadership: Technical strategy, mentoring, hiring, estimation, staffing, client management and cross-team delivery.

Education & Recognition

- **BA (Hons), Visual Effects & Motion Design** — University of South Wales.
- **BTEC, Interactive Media & Visual Design** — Coventry College.
- Contributed to work receiving multiple W3, Davey and Webby Award wins.