

# Aric Camarata

Principal AI Engineer

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## PROFESSIONAL SUMMARY

Principal AI Engineer with 20+ years building distributed systems, AI infrastructure, and full-stack applications across defense, enterprise, and product companies. I work on multi-model AI routing, hybrid retrieval (RAG), federated GraphQL, and high-throughput Go backends, and I built nSelf, a self-hosted PaaS, and nClaw, a multi-model AI router. I led development at Northrop Grumman under a TS clearance, now expired. Remote only.

Earlier work spans Apple, AT&T, the U.S. Treasury (GSOC), Credit Karma, Walmart Labs, and Cigna, across consumer platforms, government security operations, and enterprise health tech. I build AI that keeps data private: local inference on Apple Silicon, classifier-driven model routing, and on-premise RAG pipelines that keep sensitive data off third-party clouds. The open-source nSelf CLI stands up a full Postgres, Hasura, and auth stack on a \$4 a month Hetzner server, with the capabilities you would otherwise pay a managed host for.

## CORE COMPETENCIES

AI/ML, LLM, RAG, Retrieval-Augmented Generation, Embeddings, Vector Database, pgvector, tsvector, Reciprocal Rank Fusion, Cross-Encoder Reranking, Multi-Model Routing, Agent Orchestration, Claude API, OpenAI API, MLX-LM, Qwen3, Hugging Face, MCP, Prompt Engineering, Fine-tuning, Go, TypeScript, Rust, Python, PHP, RAG pipelines, BGE-M3 reranking, RRF fusion, Ollama, Gemini API, PostgreSQL, Redis, Elasticsearch, Hadoop, HBase, Cassandra, GraphQL, Hasura Federation, REST, gRPC, Docker, Nginx, Hetzner VPS, Vercel, Cloudflare, Linux, Next.js (App Router), React, Tailwind CSS

## PROFESSIONAL EXPERIENCE

### Principal AI Engineer — Unity

Jan 2024 — Present

Fairfax, VA (Remote)

- Architected nClaw — a privacy-first multi-model AI platform with classifier-driven tier-ladder routing across Claude, GPT-5.4, and local Qwen3 / MLX-LM on Apple Silicon, achieving ~60% inference cost reduction versus single-frontier-model baseline.
- Designed Memory Augmented Retrieval (MAR): PostgreSQL tsvector full-text + pgvector ANN + RRF score fusion + BGE-M3 cross-encoder reranking — sub-100ms semantic search with year-old conversation recall via ltree topic taxonomy and summary pyramids (turn / day / week / month).
- Built privacy-first inference layer: local models handle PII-bearing and sensitive operations; frontier models gated by a PII redaction and secret detection pipeline — full data sovereignty for regulated workloads.
- Open-sourced nSelf CLI (Go, 5,000+ lines, 30+ commands): single-command self-hosted backend stack (PostgreSQL, Hasura, Auth, MinIO, Redis, Nginx) replacing \$40–100/mo managed databases with \$4/mo Hetzner deployments.

### Principal Software Architect — Unity

Jan 2014 — Jan 2024

Remote

- Founded and led Unity Platforms for a decade, delivering principal-level software architecture to Credit Karma, Walmart Labs, Cigna, Cambium Networks, Progress Software, and CMD.
- Architected Unity Sites — a multi-tenant Next.js (App Router) platform serving Flock, Veterans, FlockTV, and FlockNAS brands from a single codebase; hostname-based middleware with per-tenant feature flags, Hasura RLS, and JWT custom claims enforcing zero cross-tenant data leakage at the schema level.
- Designed distributed event-driven systems on AWS Lambda, DynamoDB, GraphQL Federation, Kafka, and SNS/SQS for financial services and healthcare clients.
- Built nSelf from an internal 200-line deployment script into a full Go CLI deployed across enterprise clients — groundwork for the AI-native platform built from 2024 onward.

**Senior Developer — United States Institute of Peace**

Apr 2013 — Dec 2013

Washington, DC

- Developed and hardened web applications in C# / .NET / ASP.NET for a federal peace-building institution.
- Led application security hardening — defense-in-depth access controls, credential-stuffing mitigation, and secure session management aligned to federal security standards.
- Delivered full SDLC on compressed government timelines in a zero-tolerance security environment.

**Senior Developer — Double Prime**

Feb 2013 — Apr 2013

Remote

- Built API-first, headless content architecture using decoupled Drupal — an early implementation of platform patterns that have since become industry standard for high-scale editorial systems.
- Integrated Akamai CDN and Alfresco content management into high-traffic global editorial platforms; developed Perl-based data transformation pipelines for large-volume content migration.

**Lead Developer / Architect — Northrop Grumman**

Jul 2011 — Feb 2013

McLean, VA

- Led development on the U.S. Treasury GSOC — national-scale cybersecurity observability platform for the Department of the Treasury. Held active TS clearance (since expired).
- Architected real-time big data pipeline: Hadoop, Hive, HBase, and Cassandra under 24/7 multi-site disaster recovery SLA — large-scale data engineering infrastructure that forms the conceptual foundation of modern ML pipelines.
- Led a team of 6+ engineers through full SDLC; introduced DevOps practices (Git, TDD, CI/CD environments) and reduced deployment cycles at national security scale.

**Senior Developer — College Board**

Apr 2011 — Jul 2011

Reston, VA

- Delivered front-end and application development on the Big Future college search platform (tier-1 national traffic).
- Built feature components on Spring MVC + GWT stack with JSP/JSTL templating.

**Senior Developer — Able Engineering**

Jan 2011 — Apr 2011

Phoenix, AZ

- Built employee evaluation platform on Spring MVC — form workflows, scoring logic, and admin reporting.
- Delivered full feature set from requirements to deployment on compressed timeline.

**Senior Developer — Capgemini**

Oct 2010 — Jan 2011

Phoenix, AZ

- Built internal IT management tools on Zend Framework: ticketing system, helpdesk portal, system monitoring dashboard, and on-call rotation tool.
- Worked alongside enterprise consulting team serving large telecom and insurance clients.

**Senior Developer — Pearson Education**

Jul 2010 — Oct 2010

Chandler, AZ

- Delivered CMS integrations (Drupal, WordPress, Joomla, Mura) for educational publishing platforms.
- Built Genesys/Avaya call-center tooling for customer support operations.

**Software Developer — Apple Inc.**

Oct 2007 — Jul 2010

Chandler, AZ

- Built and maintained internal enterprise portal and knowledge base systems on Drupal and the LAMP stack, serving engineering and support teams across Apple divisions.
- Developed tools used daily by thousands of internal users — built to the reliability and maintainability standards of Apple's internal engineering culture.

**Software Developer — AT&T**

Apr 2006 — Oct 2007

Phoenix, AZ

- Led consolidation of call center support tooling as part of the AT&T / SBC AFSS merger initiative — unified NOC, Engineering, and Customer Support teams onto a single AJAX-based platform.

- Early experience with large-scale systems integration, observability tooling, and reliability engineering in a 24/7 enterprise telecom environment.

### **Manager — Roxbury Group**

Feb 2004 — Mar 2006

Fairfax, VA

- Combined branch management and software development for a regional IT services firm — technical leadership alongside operational responsibility from the start of my career.
- Deployed and administered Windows Server networks for SMB clients; built custom inventory tracking and rental management software (C, TCL, PHP) that replaced manual processes and reduced reconciliation time significantly.

### **19D Cavalry Scout — U.S. Army**

Mar 2001 — Feb 2004

Virginia

- Served as 19D Combat Cavalry Scout, U.S. Army.
- Service period included September 11, 2001 and the early post-9/11 operational period.
- Foundational experience in mission-critical decision-making, operational discipline, and leading under pressure.

## **EDUCATION**

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### **Bachelor of Science, Management Information Systems — Belltown University**

Jan 2008 — Dec 2011

PA

### **Full Curriculum — 10 Certifications**

freeCodeCamp

### **Computer Science & Mathematics — Full Library**

MIT OpenCourseWare