AMIR FIROUZMANESH, PhD

Senior Software Engineer — AI Integration · Distributed Systems

Dubai, UAE • amir@AandZ.tech • linkedin.com/in/amir-firouzmanesh • github.com/amirhf

Portfolio: AandZ.tech

PROFESSIONAL SUMMARY

Senior software engineer (PhD) and founder of AandZ.tech, an independent AI & cloud engineering practice based in the UAE. Proven track record of shipping high-impact features, including Editor AI for Windows Photos (+20% MAU) and reducing support tickets by over 50% at Property Finder. Now helps teams design and build AI-powered, event-driven systems by blending hands-on coding with clear architecture and data-driven decisions. Open to freelance, contract, and remote roles in AI integration and distributed systems.

TECHNICAL SKILLS

- **Languages:** Go, Python, Java, JavaScript/TypeScript, SQL.
- **AI/ML:** PyTorch, LLM APIs (OpenAI, Anthropic, Gemini), LangChain, ONNX Runtime.
- **Cloud & Infra:** AWS (Kinesis, Glue, Athena, Step Functions, RDS, S3), Azure, Docker, Kubernetes.
- **Data/Storage:** PostgreSQL, MySQL, SQL Server, MongoDB, Qdrant, pgvector.
- **Messaging/Streaming:** RabbitMQ, Kinesis, Kafka/Redpanda.
- **Observability:** Grafana, Application Insights, Prometheus, Jaeger.
- **Architecture:** Microservices, Event-Driven, CQRS, DR/HA, Idempotency, Transactional Outbox, CI/CD.

PROFESSIONAL EXPERIENCE

AandZ.tech — **Founder & Principal Engineer**
Dubai, UAE — *2025 – Present*

- Founded an independent engineering practice focused on generative AI integration, event-driven architectures, and cloud-native platforms for startups and digital businesses.
- Designed and built open-source reference systems acting as blueprints for client work: Credit Ledger, AI Image Search, and Learning Path Designer.
- Standardized reusable infrastructure (Docker Compose, migrations, seeders, observability) to enable clients to quickly demo, extend, or self-host systems.
- **Stack:** Go, Python, TypeScript, FastAPI, Next.js, Qdrant/pgvector, Postgres, Docker, Kafka/Redpanda.

Property Finder — **Senior Software Engineer (B2B Subscriptions/Credits)**
Dubai, UAE — *2025*

- Cut support tickets by **50%+** on listing publish/credits flows by clarifying ownership rules, fixing root causes of failures, and simplifying error paths.
- Led the move from a single codebase to microservices for subscriptions/credits, defining simple contracts between teams to ensure safer and faster releases.
- Implemented clear dashboards and alerts, improving on-call confidence and enabling the team to resolve incidents faster.
- **Stack:** Go, TypeScript, AWS, MongoDB/Postgres, RabbitMQ, Docker, Grafana, Application Insights, CI/CD.

Microsoft — **Software Engineer (Windows Photos & Designer AI)**
Canada — *2021 – 2025*

- Launched Editor AI features (background/object selection, smart erase, upscaling) driving a **+20%** increase in monthly active users for Windows Photos.
- Optimized AI performance by combining on-device models with cloud fallback, ensuring instant results for most users while maintaining consistent quality.
- Reduced P95 time-to-result for heavy edits by reworking image processing logic (tiling/batching) and memory usage.
- Stabilized releases by reducing flaky tests and implementing quality gates tied to real user metrics.
- **Stack:** TypeScript, C#, Python, ONNX Runtime, Azure AI endpoints, Docker, Windows APIs.

Amazon Web Services (AWS) — **Software Engineer (RDS SQL Server)**
Canada — *2019 – 2021*

- Expanded RDS SQL Server capabilities by enabling heterogeneous linked servers and contributing to SSAS/SSIS support, facilitating easier migrations and analytics.
- Improved seller reporting pipelines (Kinesis → Glue → Athena) to ensure reliable data delivery even with noisy upstream sources.
- **Stack:** AWS (Kinesis, Glue, Athena, Step Functions, S3), SQL Server, PostgreSQL, IaC.

DataGardens (CenturyLink) — **Software Engineer (DR/HA)**

- Reduced onboarding time from 1+ hours to ∼10 minutes by automating deployment and creating comprehensive runbooks.
- Added health checks and safe failover steps to ensure predictable production cutovers.
- **Stack:** Python, Go, Java, RabbitMQ, Ansible, AWS/Azure/GCP, Linux.

SELECTED PROJECTS & REFERENCE IMPLEMENTATIONS

Credit Ledger (Go + Postgres + Event-Driven) github.com/amirhf/creditLedger
- Reference implementation of a double-entry ledger for subscription platforms featuring transactional outbox, idempotent consumers, and replayable CQRS projections.
- *Stack:* Go 1.22+, Postgres, Kafka/Redpanda, CQRS, Docker.

AI Image Search / Feature Router github.com/amirhf/imageSearch
- Platform for integrating CLIP/BLIP embeddings and vector search, featuring local-first captioning with cost/latency-aware cloud fallback.
- *Stack:* Python, FastAPI, CLIP/BLIP, pgvector/Qdrant, Docker.

Learning Path Designer (RAG + Agent Orchestration) github.com/amirhf/learningPathDesigner
- RAG and agents demo that assembles grounded learning paths and quizzes, utilizing a Go gateway and Python services for content generation.
- *Stack:* Next.js, Go, Python, Qdrant, Postgres.

EDUCATION

PhD, Computer Science University of Alberta
Research focused on computer vision and image processing; completed coursework and a research project in distributed systems. Several peer-reviewed papers have been published in computer vision and image processing (see Google Scholar: https://scholar.google.com/citations?hl=en&user=8XrRyZMAAAAJ)