

Homayoon Alimohammadi

Senior Backend Engineer · Go · Python · Distributed Systems · Kubernetes

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Relocating to Germany, EU Blue Card eligible | currently Dubai, UAE | English (fluent), German (A2)

SUMMARY

Backend engineer with 5+ years building distributed systems in Go and Python. At Canonical, architected k8sd — the clustering daemon behind every Canonical Kubernetes cluster — and established the distribution's scale ceiling at 10K+ nodes. Previously ran services at 8K RPS and a 50M+ messages/day notification platform on a 65M-user marketplace.

PROFESSIONAL EXPERIENCE

Software Engineer — Canonical, Kubernetes Team

Jun 2024 – Present

- Architected k8sd, now the single control interface on every Canonical Kubernetes cluster, by building a Go service exposing a typed REST API for bootstrapping, node enrollment, certificate rotation, and runtime configuration over a dqlite database.
- Raised the distribution's scale ceiling to 10K+ nodes, cut 60% of the kube-apiserver load generated by its own components, and trimmed request latency by 30%, by profiling the request path and introducing batching and caching.
- Eliminated version drift and hours of manual per-node intervention from cluster upgrades — previously node-by-node, and prone to leaving components on divergent versions — by building an upgrade controller: a CRD plus controller-runtime reconciler that sequences nodes and converges the cluster from one declarative apply.
- Delivered declarative cluster provisioning across AWS, GCP, MAAS, and bare metal from one `clusterctl` workflow — validated in production by enterprise customers — by authoring the Cluster API bootstrap and control-plane providers in Go.
- Unblocked year-long NVIDIA and VMware partner engagements, by shipping an embargoed CVE fix ahead of public disclosure and landing FIPS 140-3 and long-term-support guarantees.
- Set the team's design bar by authoring 10+ design documents through to production, signing off on the designs the team ships, and mentoring two engineers through weekly design and PR review.

Software Engineer — Divar, Core Team

Jul 2022 – Jun 2024

Largest classifieds platform in the region; 65M+ active users, comparable in scale to Kleinanzeigen and Marktplaats.

- Cut p99 latency by 60% on the ad-submission service while holding its 99.99% availability SLO, by owning and tech-leading a redesign into a stateless Go microservice across 4 zero-downtime releases: aligning stakeholders, authoring the design docs, and distributing implementation across 6 engineers.
- Delivered 50M+ messages/day over Kafka across SMS, push, and email, by designing an event-driven notification platform in Go with idempotent delivery, per-channel rate limiting, and multi-provider failover; drove org-wide client integration across 8 teams and domains.
- Collapsed primary-Postgres read load on the ad-view service from roughly 10K to 100 QPS, by adding a two-tier caching path — Redis for hot keys, MongoDB as a full read replica — synced from Kafka change events; tuned Postgres for high-cardinality workloads through schema design, indexing, and partitioning.
- Standardized error contracts across 30+ services and three transports (gRPC, REST, GraphQL) behind one Go middleware library, then cut the client migration from a six-month manual estimate to one month, by building an agentic coding workflow that ported each repository.
- Mitigated a user-facing outage in under 15 minutes, by tracing unresponsive pods to unhealthy nodes; stopped steady memory growth in production by profiling goroutine leaks and hot-path allocations with pprof — on call two days a week in a 4-engineer rotation.

Software Engineer — AI Medic

Feb 2021 – Jul 2022

- Stood up the company's first production backend, defining the API contracts and data model the product was built on, by building Go and Python services for authentication, user profiles, and medical-image retrieval.

OPEN SOURCE AND WRITING

Core contributor to Canonical's Kubernetes stack (k8s-snap, microk8s, cluster-api-k8s); upstream patches in [grpc/grpc-go](#). Write on Go, distributed systems, and Kubernetes internals at [homayoon.blog](#).

SKILLS

Languages: Go, Python, SQL, Bash

APIs and Architecture: gRPC, REST, GraphQL, Protobuf, Microservices, Event-Driven Architecture, Kafka, Distributed Systems, High-Availability Design

Data: PostgreSQL, Redis, MongoDB, etcd, ClickHouse

Kubernetes and Cloud: Operators/CRDs, Controller-Runtime, Cluster API, Helm, Terraform, Docker, AWS, GCP, Linux

Reliability and Delivery: Prometheus, Grafana, OpenTelemetry, SLO-Based Alerting, On-Call and Incident Response, pprof/Profiling, CI/CD, Integration/E2E/Load Testing

AI/LLM: LLM agents, MCP, RAG

EDUCATION

MSc coursework, Artificial Intelligence — K. N. Toosi University of Technology

Sep 2023 – Jun 2024

BSc, Materials Science and Engineering — Sharif University of Technology

Sep 2018 – Feb 2023