

Javed Habib

Backend & Platform Engineer · Kubernetes · AI Agents

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Backend & platform engineer with 2+ years owning production systems end-to-end as a founding engineer on a remote team: Kubernetes compute platforms, auth/IAM, observability, and LLM-agent backends in Python and Rust. Open-source first: 2× **Google Summer of Code** and **2026 GSoC** mentor.

EXPERIENCE

Software Engineer (Founding Team)

Oct 2024 - Jul 2026

Pacific Analytics

Remote, Australia

- Built a production **agentic AI system** (Python, Google ADK, Vertex AI) coordinating 10+ MCP-connected services (live queries over a 500 GB+ internal database and retrieval across TB-scale public archives), cutting analyst report turnaround from **hours to under 15 min**.
- Architected the **Kubernetes-native workflow platform** for HIPAA/EU-AI-Act-scoped clients, bringing typical pipeline runs from **hours down to ~15 min** across 30+ client pipelines; shipped via ArgoCD GitOps with push-to-merge releases under 5 min.
- Designed the **authN/authZ layer** (Keycloak OIDC, a custom IAM service, and OPA/Rego policies across 10+ services), and hardened the cluster with mTLS, K8s RBAC, NetworkPolicies, and Sigstore-signed images.
- Built a chunked, resumable **S3 upload service** for multi-TB datasets with constant-memory streaming, plus a metadata index serving **sub-50 ms search across 5M+ objects**; an OCI-runtime sandbox isolates untrusted user code.
- Instrumented a polyglot Python/JS/Rust service fleet with **OpenTelemetry**, unified in SigNoz and Grafana for end-to-end request tracing in production debugging.

Software Developer

Sep 2023 - Oct 2024

ELIXIR Cloud & AAI

Remote, Switzerland

- Authored the org's **Python service template**: Poetry, type checks, dev containers, complexity gates, and hardened GitHub Actions, **standardising new ELIXIR Cloud services**.
- Owned **CI/CD and release-on-merge pipelines** across an 8-service fleet; maintained **proWES/proTES** (GA4GH WES/TES proxy middleware) with type-safety refactors, CI repair, and K8s manifest fixes.

Google Summer of Code: 2× Contributor (2023, 2024) & 2026 Mentor

Jun 2023 - Sep 2024

Global Alliance for Genomics & Health (GA4GH), via ELIXIR Cloud

Remote

- GSoC '24**: Led the ground-up redesign of **TESK**, a Kubernetes-native GA4GH TES server used in production at universities in Czechia and Greece: Java 8 to Python 3.11 (Flask/Connexion via FOCA), **image ~10× smaller** (650 MB to 70 MB), **cold start ~6× faster** (45 s to 7 s); added TES data models, K8s client layer, Helm charts, multi-arch CI, and docs.
- GSoC '23**: Built framework-agnostic Web Components for GA4GH WES/TES on a design-token system; they became the core of the **ELIXIR Cloud Components** suite.

OPEN-SOURCE PROJECTS

Poesis | *Kubernetes-native GA4GH TES 1.1 server* | *Python, Helm, Apache-2.0*

github.com/JaeAeich/poesis

- Wrote a spec-conformant task execution service from scratch: each task runs as a K8s Job with S3 staging and PVC cleanup; production Helm chart with HPA, PDB, NetworkPolicy, RBAC, and HA leader election via the Lease API. **Forked and run in production by an external org**; Rust sibling **PoesisD** targets single Docker hosts.

Metis | *GA4GH WES 1.1 workflow execution service* | *Rust, axum, NATS JetStream, Postgres*

github.com/JaeAeich/metis

- Nextflow, Snakemake, and CWL plug in behind a single trait; API and execution tiers decoupled over NATS with Valkey job tracking, **load-tested at ~2k submissions/s** with 10k+ in-flight workflows on a single node, traced end-to-end with OpenTelemetry.

s3z | *High-throughput S3 client & library* | *Rust, PyO3, napi-rs*

github.com/JaeAeich/s3z

- Streaming, parallel multipart engine with hand-rolled AWS SigV4; in published benchmarks vs mc/s5cmd/aws-cli, **up to 3× aws-cli download throughput** at a fraction of the memory (17 MB vs 400 MB RSS); ships as CLI, Rust crate, and Python/Node packages.

TECHNICAL SKILLS

Languages: Python, Rust, Go, TypeScript, SQL, Bash, Java

Backend & Data: FastAPI, axum/tokio, REST/OpenAPI, gRPC, Postgres, Valkey/Redis, NATS JetStream, S3/MinIO

Cloud & Infra: Kubernetes, Helm, Docker, ArgoCD/GitOps, GitHub Actions, Terraform, OpenTelemetry, Grafana, SigNoz

Security: Keycloak (OIDC), OPA/Rego, JWT, mTLS, K8s RBAC, NetworkPolicy, Sigstore

AI: LLM agents, Google ADK, Vertex AI, MCP servers, RAG

EDUCATION & LEADERSHIP

Indian Institute of Technology (IIT) Bhilai

B.Tech, Computer Science & Engineering

CGPA: 8.53 / 10

- Google Developer Student Clubs Lead and OpenLake OSS mentor: ran workshops on cloud, AI/ML, and open source. Upstream fixes to the GA4GH TES spec and CNCF Harbor CLI.