Akash Kumar Sinha

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Professional Summary

Software Engineer and 2026 Computer Science graduate with hands-on backend engineering experience and open-source contributions. Experienced in Go, C++, Rust, Python, relational databases, concurrency, and containerized applications. Built multi-service backend systems, asynchronous processing pipelines, and real-time execution environments. Interested in building reliable software and solving complex engineering problems.

Technical Skills

Languages: C++, Go, Python, Rust, TypeScript
Computer Science: Data Structures and Algorithms, Object-Oriented Design, SOLID, Design Patterns, Concurrency
Backend: REST APIs, Microservices, WebSockets, Asynchronous Processing
Databases and Messaging: PostgreSQL, MySQL, Redis, Kafka, SQL
Infrastructure and Tools: AWS ECS, Amazon Bedrock, Docker, Linux, Git

Experience

Benchmark Administration *Remote – Contract*
Backend Developer *March 2026 – June 2026*

- Contributed to Go backend services supporting business logic, Redis-backed caching, and demographic data workflows in a multi-tenant application.
- Helped implement and maintain REST API conventions and developer tooling to keep endpoint patterns consistent across services.
- Worked across backend services and a WebAssembly frontend built with Go templates in a small remote team.
- Debugged cross-service issues and wrote unit tests to verify behavior and reduce regressions.

Open Source

OpenTelemetry Collector Contrib github.com/open-telemetry/opentelemetry-collector-contrib/pull/46947

- Fixed a nil pointer dereference during Collector shutdown by addressing a race condition involving in-flight export consumers and the writer lifecycle.
- Hardened export routines against writes to closed files, returning `io.ErrClosedPipe` gracefully instead of allowing shutdown-related panics.
- Coordinated background flusher lifecycle using `sync.WaitGroup` and added `TestFileExporterShutdown` covering traces, metrics, logs, and profiles.

Entros Protocol – Executor Node github.com/entros-protocol/executor-node/pull/12

- Implemented an API-key-authenticated status endpoint with constant-time comparison, lock-free metrics using `AtomicU64`, TTL caching, and unit tests.

Projects

Video-Based RAG-Powered Search Engine github.com/Akash-Kumar-Sinha/akssora_search
Go, Python, Kafka, Amazon Bedrock, AWS ECS

- Built a multi-service retrieval-augmented search pipeline comprising a Python embedding service, Go REST API, and asynchronous workers.
- Designed the semantic-search embedding workflow with configurable similarity thresholds and result ranking.

Aks IDE – AI Code Execution Sandbox github.com/Akash-Kumar-Sinha/Aks_ide *Rust, Axum, TypeScript, Docker, WebSocket, Tokio, Gemini*

- Built a Rust/Axum backend for PTY-based terminal sessions, binary stream handling, and low-latency WebSocket communication.
- Implemented bidirectional real-time communication using Tokio, enabling browser-based interaction with Linux shell sessions.
- Isolated user execution sessions in Docker containers and developed a concurrent execution workflow for session handling.
- Integrated Gemini-powered code suggestions and autocompletion into the browser-based editor.

Education

Chandigarh University *Graduated 2026*

B.E. in Computer Science CGPA: 7.6