

Mahmud Bello

Systems engineer. I build *protocols, cryptography and developer tooling* in Rust.

I have spent six-plus years writing production Rust and C++, mostly on distributed systems, protocol engineering and the tools other developers depend on. I work solo or in small teams, publish what I build as open source, and have led engineering and developer relations for products used by thousands of people.

blinkztyler@gmail.com · github.com/mahmudsudo · linkedin.com/in/mahmud-b-613575207 · mahmudsudo.github.io

6+ years	29k+	5,000+	Zcash grant
Production Rust and C++	Downloads of <code>circuit_breaker</code> on crates.io	Users reached while CTO at StreamLivr	Funding a FROST threshold signature SDK

EXPERIENCE	Independent Systems Engineer · Self-employed, Lagos Rust · distributed systems · protocols · cryptography - Design and ship open-source Rust infrastructure: web frameworks, reliability primitives, configuration languages, testing tools and security tooling. - Build a FROST threshold signature SDK on top of the Zcash Foundation's audited stack, funded by a Zcash Community Grant. - Take on paid protocol and open-source bounty work, including merged contributions to ZK and compiler projects (see Open source). Chief Technology Officer · StreamLivr Technical leadership - Led technical direction and a team of 10. - Scaled the product to 5,000+ users. Lead Developer Relations · ICP Hub Sahara West Africa Developer community · Internet Computer - Ran public conferences, hackathons and developer events for the Sahara West Africa hub. - Worked in depth with ICP canister architecture and the developers building on it. Developer Relations · Microsandbox Developer experience · sandboxing - Ran public events and hackathons introducing developers to microVM-based sandboxing. Protocol and DeFi engineering · NEAR, Coronet, ZkLend Consensus · DEX infrastructure - Worked on NEAR Protocol consensus. - Built DEX infrastructure at Coronet and ZkLend. - Won hackathons with ZkLend, ICP Vietnam and Mina.
------------	---

PROJECTS	circuit_breaker The circuit breaker pattern for building resilient, fault-tolerant Rust services. My most-downloaded crate, past 29,000 downloads.	fastrs A FastAPI-style framework for Rust on Axum. Request validation and OpenAPI docs generated at compile time, with zero runtime overhead.	aml_rs Abstract Modeling Language: a correct-by-construction configuration language. Strict types, schemas, safe defaults and native migrations, fixing YAML's "Norway problem" at the root.
	qexpose Scans Bitcoin UTXO sets for quantum exposure and benchmarks post-quantum signatures. Three-crate workspace built for Galaxy Research's Bitcoin quantum readiness grant.	agentest-rs A testing framework for AI agents, structured as a four-crate Rust workspace. Built for the TestMu AI grant.	FROST threshold signing SDK Developer-friendly threshold signatures wrapping the Zcash Foundation's audited FROST stack. Active Zcash Community Grant.

MORE WORK

daemon_rs	High-performance structured logging daemon with Parquet storage.
rate_rs	Universal rate limiting library for Rust web frameworks.
agenticrs	Resilience and observability layer for LLM and agentic workflows.
structura_rs	Advanced data structures behind one unified, no_std-friendly API.
cargomon	nodemon for Rust: rebuilds and reruns your project when files change.
rye_rs	Laravel and Phoenix-style fullstack framework with CLI scaffolding for Axum or Actix on Postgres, MySQL or SQLite.
social_rs	Reliability-focused social media connector for AI agents, with a RiskGate layer for safe actions.
hone	A comprehension gate for AI-assisted coding, published on npm as hone-skill .

OPEN SOURCE & GRANTS

Contributions to other people's projects

- **Pluto Labs, Ronkathon:** BLS work (PR #216), bounty-bearing and merged after full maintainer review.
- **ingonyama-zk, Blaze:** contributions to a ZK proving system.
- **Paradigm, Solar and Ithacaxyz, Odyssey:** compiler and tooling contributions.
- **Arrow DAO, Project Quiver:** paid contributor on an open-source drone platform. Fixed simulator docs and wrote the first milestone of the Attachment Developer Guide.

Grants and competitions

- Zcash Community Grant (active): FROST threshold signature SDK.
- Hackathon wins across ZkLend, ICP Vietnam and Mina, including international events.
- Security research on HackerOne as @mhsudo.

SKILLS

Languages	Rust and C++ (6+ years, production). Go, Elixir and Haskell. TypeScript and React when the job needs it.
Systems	Distributed systems, protocol engineering, no_std Rust, embedded work on ESP32, compilers and proc macros.
Cryptography	FROST threshold signatures, zk-SNARK proving systems, Poseidon cryptanalysis (active study), post-quantum signatures, applied Bitcoin and Ethereum protocols.
Infrastructure	AWS (EC2, Lambda), Kubernetes, PostgreSQL and MySQL administration, bare-metal operations including RAID and capacity planning.
Security	Bug bounty research, smart contract security, CompTIA PenTest+.
Developer experience	Developer relations, public speaking, hackathon organizing, technical writing, documentation.

EDUCATION & CREDENTIALS

B.Tech, Mechatronics, Robotics and Automation Engineering

Federal University of Agriculture, Abeokuta (FUNAAB)

Computational and Applied Mathematics

Stanford Online

Certifications

- CompTIA PenTest+
- Smart contract security
- Bitcoin development

WRITING

I write up the technical problems I run into, covering Rust, protocols, security and infrastructure, at mahmudsudo.hashnode.dev.

CONTACT

github.com/mahmudsudo linkedin.com/in/mahmud-b-613575207 crates.io/users/mahmudsudo
hackerone.com/mhsudo