

# Muhammed Farseen

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<https://linkedin.com/in/itsfarseen> | <https://github.com/itsfarseen>

## SKILLS

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Rust, Go, Javascript, Typescript, Python, C, Zig

Kafka, Docker, Kubernetes, Terraform, Ansible

## WORK EXPERIENCE

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### Stealth HFT Startup

Dubai (Remote)

Rust Developer / High performance indexing + Tx building

November 2025 - August 2026

- **Developed** custom blockchain indexers for **EVM**, **Solana** and **Hyperliquid** using Rust while minimizing decoding latency.
  - Source transactions from popular blockchains through their realtime streaming endpoints.
  - Process transactions using high performance Rust, extract relevant data, send to **Kafka**.
  - Maintain a hard latency budget of under 100ms.
  - Benchmark different coding patterns to find the absolute latency floor.
- **Developed** custom transaction builders for **EVM** and **Solana**, in Rust, while minimizing the latency between input data arrival and production of valid transactions.

### MLabs

London, United Kingdom (Remote)

Lead Software Developer

April 2022 - November 2025

- **Architected and developed** Submarine, a block explorer for **Polkadot** and parachains.
  - Built the backend in **Go** using Gin, providing access to up-to-date block data, which indexes **1M blocks/hour**, **~8x faster** than existing solutions on similar hardware.
  - Redesigned the Golang libraries to interface with the blockchain and **improved efficiency** and ergonomics.
  - Implemented **Go code generation** to eliminate boilerplate blockchain metadata decoding, improving both **correctness** and **maintainability**.
- **Led the backend team** for Nezha, a lottery startup on **Solana** blockchain.
  - Led the development of the Axum backend in **Rust**, serving 3 million reqs/hr.
  - Reduced API **p99 latency** from 2s to **<500ms** by caching blockchain data, while making sure that the cache accurately reflects the latest state.
  - Architected an **indexer** that subscribes to finalized blocks from the blockchain and processes them to extract relevant data, providing a **real-time cache** of blockchain state, helping us reduce **page load time** from 10s to **<1s**.
  - Implemented a full **observability stack** (metrics, logs, tracing) that reduced mean **time to detect issues** by **70%** and cut **incident resolution time** in half. It also helped us proactively **detect performance regressions** and production issues.
  - Developed and deployed the smart contract, while **minimizing transaction costs** and ensuring efficient execution.
  - Achieved a **9.3/10 overall audit score** and **10/10 security audit score**, reflecting high code quality, attention to security and adherence to best practices.
- **Implemented key optimizations** for **RIGEL**, a Llama2 based RAG system.

- Engineered a high-throughput **data processing pipeline** in **Rust** that slashed processing time from ~1 hour to **<5 minutes** through parallelism, streaming, and memory-efficient processing.
- Built a custom optimized **vector storage database** in **Python**, speeding up RAG indexing by ~5x and retrieval by ~2x.
- **Built developer tooling and support libraries** for the **Cardano** blockchain
  - Developed Cardano Data Lite in **Typescript**, for transaction construction, signing and serialization. Implemented a **code generator** to eliminate boilerplate in serialization/deserialization logic and improve correctness.
  - Created a Cardano wallet browser extension with enhanced debugging capabilities, enabling developers to inspect transaction data, trace execution, and troubleshoot dApps more efficiently.

## Strand Life Sciences

Associate Software Engineer

**Bengaluru, India**

June 2021 – April 2022

- **Developed the frontend and backend for PQRS**, a HIPAA-compliant platform for medical labs and hospitals to securely manage patient data, process results from laboratory equipment, and generate test reports.
  - Built the backend in **Flask (Python)** with strict access controls, audit logging, and secure data pipelines for high-volume lab instruments.
  - Integrated seamlessly with **LIMS (Laboratory Information Management Systems)** to automate result imports and minimize manual data entry.
  - Implemented workflows to ensure HIPAA compliance and data security across all application layers.
  - Delivered a streamlined reporting process that **reduced preparation effort and improved turnaround times** for delivering results to patients and clinicians.
- **Engineered an in-house PDF layout & rendering engine** in JavaScript to replace WebKit's print rendering, which produced inconsistent results due to the unsuitability of HTML/CSS for print.
  - Designed a **more intuitive and controllable print layout algorithm** that delivered precise, predictable output.
  - Created a **simpler, purpose-built design** that was easier to learn, use, and control than HTML/CSS, improving developer productivity.
  - Produced **consistently correct layouts** across all report types, avoiding the formatting inconsistencies of WebKit-based rendering.
  - **Shortened the design-to-deployment cycle** for new report layouts from **days to hours** through improved control and reduced complexity.
- **Developed the backend for CloudNGS**, a turnkey enterprise deployment platform for the StrandNGS genomic sequencing program.
  - Built in **Go**, with the backend **orchestrating Terraform workflows** to provision and configure infrastructure on demand.
  - Enabled **reproducible, cloud-ready deployments** across diverse enterprise environments.
  - Delivered a deployment process that was **consistent, scalable, and easily replicable** across installations.

## PROJECTS

- Userspace TCP/IP stack in Rust, a minimal implementation of the RFC 793.  
<https://github.com/itsfarseen/userspace-tcp-ip-stack>

- Zero-config build tool for C/C++ projects  
<https://github.com/itsfarseen/cbuild.py>
- Zig port of wayland-scanner  
<https://github.com/itsfarseen/zig-wayland>

## EDUCATION

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### **National Institute of Technology, Calicut**

Bachelor of Technology in Computer Science and Engineering

CGPA: 8.38/10

**Calicut, Kerala, India**

June 2017 – May 2021