

Althaaf Syaikha Nuhaad

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EDUCATION

University of British Columbia

Vancouver, BC

Bachelor of Applied Science, Computer Engineering

2022 – 2026

- Dean's Honour List (2022, 2023); awarded the fully funded Indonesia Maju Scholarship (approximately **\$300,000 CAD**) after selection from approximately 1,000 national finalists.
- **Bronze Medalist**, 2022 International Physics Olympiad (IPhO); represented Indonesia and placed ahead of **200+ students from 75 countries**.
- **Coursework**: Relational Databases, Distributed Systems, Operating Systems, Software Testing.

PROJECTS

Fault-Tolerant Distributed Key-Value Store | *Java 21, Maven, Protocol Buffers, JUnit, AWS EC2*

- Built a distributed key-value store using consistent hashing, four-replica quorum reads and writes, epidemic gossip, vector clocks, failure detection, and at-most-once request handling over UDP and TCP.
- Validated correctness and recovery with JUnit and Maven integration tests on a **40-node deployment** under evaluator workloads of up to **2,048 concurrent clients**.

LabFisika — Bilingual Physics Practice & AI Tutor | *TypeScript, React, Next.js, FastAPI, AWS* labfisika.com

- Built and deployed a bilingual Next.js/React application on S3 and CloudFront with a FastAPI, SQLAlchemy, and SQLite backend on EC2; serves **609 searchable problems** and user-created practice sets.
- Designed a controlled contribution workflow where public edits remain browser-local until submission; administrators compare rendered changes and image evidence before accepting or rejecting canonical updates.
- Implemented a grounded bilingual **Socratic AI tutor** with SSE streaming, multi-turn problem and solution context, interface-language controls, and guardrails against premature answer-giving.
- Built a Python PDF ingestion pipeline producing **667 validated records**; content hashes skip unchanged inputs, while CI, pytest, and Playwright checks cover data integrity, API security, contributions, and language switching.

Page-Based B-Tree Storage Engine & Visualizer | *Python, ReactFlow, Pyodide, pytest*

[Live demo](#)

- Built a page-based storage engine with **4 KB pages**, slotted records, free-space tracking, B-tree indexes, and a ReactFlow visualizer for inspecting node-level state transitions.
- Exposed the engine through a browser demo with Pyodide/WebAssembly and validated insert, search, delete, split, and reload behavior across **12 pytest cases**.

EXPERIENCE

Consular Intern

Jun 2026 – Present

Consulate General of the Republic of Indonesia

Vancouver, BC

- Built a LAN-only PWA with **Node and SQLite** for ATK inventory, supply-issue records, and vehicle-trip logging on an office network.
- Implemented shared authentication and roster flows, transactional records, backup/restore utilities, and tested business rules without sending operational data to a cloud service.

AI Engineer

Feb 2026 – Apr 2026

Kolosal.AI

Jakarta, Indonesia (Remote)

- Built a real-time voice agent in **Rust** that translated spoken commands into chained create, update, and delete operations on a collaborative Figma-like canvas.
- Integrated Deepgram and LLM APIs for **sub-second streaming responses**; added schema validation, retries, and recovery for incomplete actions, and delivered the prototype to engineering leadership.

Data Analyst Intern

May 2024 – Jul 2024

Ciptadana Asset Management

Jakarta, Indonesia

- Built a Python web crawler and ETL scripts to collect and clean **5 years** of LQ45 equity data, reproducing the required market dataset without a paid subscription.
- Benchmarked ChatGPT, Gemini, and Perplexity on market-summary quality and presented the recommended workflow to the director.

TECHNICAL SKILLS

Languages: Python, TypeScript/JavaScript, Java, Rust, SQL, C, C++, Bash, HTML/CSS

Web & Backend: React, Next.js, FastAPI, SQLAlchemy, Pydantic, Node.js, MapLibre, REST APIs, Server-Sent Events

Data & Testing: SQLite, MongoDB, DuckDB, Parquet, GeoJSON, relational data modeling, pytest, Playwright, JUnit

Cloud & Tools: Git, Linux, Windows, Docker, Maven, CI/CD, AWS (EC2, S3, SQS, Batch, CloudFront), Terraform, Protocol Buffers