

Fatih Maulana

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

PROFESSIONAL SUMMARY

Results-driven researcher and engineer with a strong foundation in **Computer Science**, **Quantitative Analysis**, and **Software Engineering**. Experienced in designing hybrid quantum-classical algorithms, building scalable web infrastructures, and leading cross-functional teams. Combines rigorous logical thinking with practical expertise in project planning, system documentation, and stakeholder negotiation. Passionate about applying mathematical models and low-level engineering to solve complex problems in high-frequency trading and distributed systems.

EDUCATION

UIN Sunan Gunung Djati

Bachelor of Science in Informatics Engineering

Bandung, Indonesia

2023 – 2027

- GPA:** 3.84 / 4.00 (Summa Cum Laude Track)
- Focus:** Distributed Computing, Cybersecurity, Blockchain, and Networks.

Universiti Utara Malaysia (UUM)

Bachelor of Computer Science with Honors (Exchange Program)

Kedah, Malaysia

2025 – 2026

- Focus:** Software Development Management, Cybersecurity, Blockchain, IT Resource Management.

Private Boarding School Minhajul Haq

Senior High School Diploma

Purwakarta, Indonesia

2020 – 2023

- Average Final Score: 95.00. Focused on Language Proficiency, Theology, and Leadership.

QUANTITATIVE & SCIENTIFIC RESEARCH EXPERIENCE

High-Energy Physics & Quantum Computing Researcher | *Independent*

Dec 2025

- Designed and benchmarked hybrid quantum-classical algorithms to classify High-Energy Physics (HEP) events using the **ATLAS Higgs Boson Challenge dataset** ($N = 800$ events).
- Implemented a dimensionality reduction pipeline using **PCA** to map 30 physical features into NISQ-compatible latent spaces (4 and 8 qubits).
- Engineered a **Variational Quantum Circuit** utilizing `ZZFeatureMap` and `RealAmplitudes` ansatz.
- Key Finding:** Demonstrated that increasing circuit depth ($d = 2$) yielded a **56.2% accuracy**, outperforming wider 8-qubit circuits (50.6%) which suffered from the **Barren Plateau problem**.
- Optimized parameters utilizing the **COBYLA** gradient-free optimizer via **Qiskit SDK**.

Quantitative Analyst & Machine Learning Researcher | *UUM*

Late 2025

- Conducted a rigorous statistical evaluation of technical indicators (**RSI**, **SMA**) to test the weak-form **Efficient Market Hypothesis (EMH)** on Bitcoin (BTC/USD) data.
- Developed a backtesting engine in **Python (Pandas, NumPy)** to engineer momentum features and volatility metrics.
- Evaluated k-NN, Decision Trees, and Logistic Regression; utilized **ROC/AUC analysis** to demonstrate that standard technical indicators failed to achieve statistical significance ($AUC \approx 0.5$) due to market efficiency.
- Diagnosed model failure modes (overfitting vs. mode collapse) proving the stochastic nature of short-term price movements.

Statistical Analysis of NYSE Market Trends | *Python, Pandas, Matplotlib*

- Conducted rigorous Exploratory Data Analysis (EDA) on NYSE historical data to identify long-term trend components and seasonality.
- Visualized volatility regimes and price distributions utilizing `Matplotlib/Seaborn`, providing insights into market stability periods.
- Implemented efficient data pipelines to clean and process raw financial datasets, ensuring data integrity for downstream analysis.

Blockchain Market Researcher (Contract) | *Toobit Exchange*

Oct 2025 – Dec 2025

- Directly commissioned by the ASEAN Marketing Manager to execute a comprehensive strategic analysis of the Malaysian blockchain and cryptocurrency landscape.
- Conducted due diligence on local regulatory frameworks and competitor market share, providing data-driven recommendations for regional expansion strategies.
- Analyzed user demographic trends and crypto-adoption vectors to formulate actionable insights for optimizing local community engagement and marketing campaigns.

WORK EXPERIENCE

Changlun Smart Agriculture System

Malaysia

Full-Stack Engineer (Academic Collaboration) with Dr.Rohaya @UUM

2025

- Architected a scalable SaaS platform for agricultural data management using **Django (Python)**, focusing on backend logic and database schema optimization.
- Designed RESTful APIs to handle data ingestion from IoT sensors, ensuring data integrity and efficient query performance.
- Collaborated directly with research professors to translate agricultural domain requirements into technical system specifications.

National Student Election System for CSSMoRA Indonesia

Remote

Security Consultant & Interim Lead

Nov – Dec 2025

- Salvaged a critical national voting project by stepping in as Lead Developer just **24 hours prior to launch**; strategically pivoted from a failed complex web architecture to a serverless Google Apps Script solution to guarantee on-time delivery.
- Engineered a **token-based validation mechanism** within the script backend to enforce strict unique-voter constraints, successfully processing votes with zero fraud incidents despite platform limitations.

Ibunda.id

Bandung, Indonesia

Technical Writer & Analyst

Jun 2025 – Oct 2025

- Developed detailed system documentation and role-specific user manuals for three core products using GitLab and Notion, reducing onboarding time.
- Conducted technical presentations on user sentiment analysis utilizing **Support Vector Machine (SVM)** algorithms, translating complex AI concepts into actionable insights for stakeholders.
- Documented API contracts and service boundaries within a microservices architecture to ensure clarity in inter-service communication.
- Monitored code quality via **SonarQube** and analyzed application logs in **Grafana** to proactively identify bug patterns.

StudentxCEOs Bandung Chapter

Bandung, Indonesia

Front-End Engineer

Jan 2025 – Jun 2025

- Developed UI components for six web pages including login and registration using **Next.js** and **TypeScript**.
- Resolved server-side rendering issues in Next.js that caused page load delays, optimizing component rendering for better performance.
- Collaborated with UI/UX designers and backend teams to ensure seamless integration and consistent user experience.

Wo-Men in Tech Security

Remote

GRC Member

Nov 2025 – Present

- Assisted in audit preparation for ISO 27001 and SOC 2 by gathering and tagging technical evidence from IT teams.
- Monitored GRC automation platforms (Vanta, Drata) to identify and remediate non-compliant devices, achieving 100% policy adherence.
- Administered security awareness training with a 95%+ completion rate and maintained the central Risk Register.

Focustudio.online

Remote

Founder & Developer

Oct 2024 – Present

- Founded a personal web agency, managing client projects from development to deployment.
- Implemented **CI/CD pipelines** using Cloudflare Tunnel and GitHub Actions to automate deployment workflows.
- Ensured site reliability and continuous delivery through rigorous automation practices.

Indonesian Ministry of Religious Affairs (w/ LPDP)

Jakarta, Indonesia

Technical Support Specialist & Virtual Coordinator

Apr 2024 – Apr 2025

- Managed end-to-end virtual infrastructure for national-level PBSB scholarship selection, facilitating interviews for hundreds of candidates.
- Orchestrated complex Zoom logistics including breakout rooms and secure access controls for government officials.

TECHNICAL SKILLS

Quantitative & Scientific: Python (NumPy, Pandas, SciPy, Scikit-learn), Qiskit (Quantum), MATLAB, R, Statistics, Financial Modeling

Languages: Python, C, C++, Java, SQL, Bash, JavaScript (TypeScript), PHP, Dart

Software Engineering: Django, Next.js, Flutter, Spring Boot, OOP, System Design, Microservices, CI/CD (GitHub Actions)

Security & Infrastructure: Kali Linux, Burp Suite, OWASP ZAP, Wireshark, Docker, Cloudflare, SonarQube, Grafana

Tools: Git, LaTeX, Jupyter Notebooks, Postman, Figma, Notion, Trello, Jira

Languages: English (Professional), Indonesian (Native), Arabic (Professional), Melayu (Conversational), Japanese (Conversational)

Interests: Classical Piano, Strategic Games (Chess/Poker), Financial Markets, Open Source Software

SELECTED TECHNICAL PROJECTS

- E-Commerce Website Penetration Testing** | *Security Tester* Jan 2025
- Conducted comprehensive penetration testing using Burp Suite and OWASP ZAP; identified vulnerabilities including XSS, IDOR, and broken access control.
 - Assessed severity using CVSS scoring and generated detailed remediation reports for stakeholders.
- Dijkstra Pathfinding Algorithm Visualizer** | *Java, Graph Theory* Jan 2024
- Developed a high-performance GUI application to visualize Dijkstra's shortest-path algorithm on weighted graphs.
 - Implemented optimal data structures (**Priority Queue**) to ensure $O(E + V \log V)$ time complexity.
- Embedded IoT Item Counter System** | *C Language, Arduino* Jan 2024
- Engineered a low-level embedded system using **C** to process real-time sensor data from ultrasonic modules.
 - Implemented direct memory management and hardware interrupt handling to minimize latency.
- DIY Brain-Computer Interface (BCI)** | *C++, ESP32, Signal Processing* Dec 2025
- Engineered a low-cost BCI prototype using ESP32 microcontroller to capture and process bio-signals (EEG) in real-time.
 - Implemented digital filters (Band-pass, Notch) in C++ to isolate neural activity from electrical noise, mirroring signal extraction techniques.
- Financial Transaction & Banking Simulation** | *Java, OOP* Jan 2023
- Built a banking simulation app with core features (deposit, withdrawal, investment) using strict OOP principles.
 - Implemented backend logic for ROI calculation and transaction integrity.
- Other Engineering Projects** | *Various Technologies* 2023 – 2025
- **StudentxCEOs Website:** Developed landing page with login/registration using Next.js and TypeScript.
 - **Mobile E-commerce Prototype:** Designed functional prototype with Flutter (Dart) focusing on state management.
 - **Campus Whistle-blowing System:** Built a CRUD-based reporting system using PHP and MySQL.
 - **Psychology-based Game:** Led a team to build a game prototype using Unity and C#.
 - **Library Management System:** Developed a Java desktop app for managing book loans and members.

LEADERSHIP, AWARDS & ACTIVITIES

- Head of Financial Literacy Dept** | *CSSMORA UIN SGD* Jul 2025 – Present
- Spearheaded the design of a comprehensive financial literacy curriculum, mentoring members on **Fundamental & Technical Analysis**.
 - Led a cross-functional team to execute educational workshops, bridging theoretical finance concepts with practical application.
- Academic Board Member (NALAR)** | *HIMATIF UIN SGD* Mar 2025 – Present
- Mentored peers on core Computer Science concepts (Algorithms, Calculus), facilitating study groups to enhance academic performance.
 - Served as a technical speaker for departmental events, translating complex curriculum topics into accessible modules.
- Google Developer Student Club (GDSC)** | *Member* Jan 2023 – Jan 2024
- Applied Machine Learning techniques including Classification, Regression, and Clustering using Python/NumPy.
 - Contributed to open-source repositories related to Flutter and Next.js.
- Honors & Additional Leadership**
- **Speaker**, Youth Today x Schoters at JoinAIESEC Event (Youth Empowerment).
 - **Best Speaker**, English Domestic Competition (Pare).
 - **3rd Place**, Chemical Engineering at Madrasah Science Competition (West Java).
 - **Delegates**, AIESEC Future Leaders Winter Peak.
 - **Head of Marketing Bureau**, CSSMORA UIN SGD (Economic Development Division).
 - **Secretary of Art Division**, OSMHA (Minhajul Haq Student Council).

CERTIFICATIONS

- Cisco Certified Network Associate (CCNAv7)** - In Progress (Focus on Switching, Routing, and Wireless Essentials)
- Cybersecurity Introduction** - Codingstudio.id (Jan 2025 – Sep 2027)
- CS50's Introduction to Computer Science** - Harvard/edX (Dec 2024 – Dec 2025)
- GRC Introduction** - Codingstudio.id (Dec 2024 – Dec 2025)
- Website Penetration Testing** - Codelamp Bootcamp Indonesia (Nov 2025 – Nov 2026)