

Muhammad Ilham

Computer Engineering · IoT & Embedded Systems · Web Development

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Aceh Barat Daya, Aceh, Indonesia

PROFILE SUMMARY

Final-year Computer Engineering student at Syiah Kuala University. Passionate about IoT and embedded systems, with hands-on experience in hardware and software development. Proficient in web development and front-end UI, with a portfolio website built from scratch. A fast learner who works effectively both independently and in a team, always bringing commitment and positive energy to every project and challenge.

SKILLS

Embedded Systems	: ESP32, Arduino, Raspberry Pi, C/C++
Internet of Things	: Sensor Integration, MQTT, HTTP, AWS IoT, Hardware-Software Integration
Web Development	: HTML, CSS, JavaScript (Front-End), Flask (Back-End), Flutter, Laravel
Computer Vision	: OpenCV, Image Processing
System Design	: PCB Design, Fritzing, Blender, CAD
Soft Skills	: Teamwork, Works Well Under Pressure, Responsible, Adaptable, Fast Learner

EDUCATION

Universitas Syiah Kuala — Banda Aceh, Indonesia Aug 2022 – May 2026 (Expected)

Bachelor of Computer Engineering | GPA 3.67ss / 4.00

- Participant of PKM 2025 (Student Creativity Program)
- Reached PIMNAS 38 — 38th National Student Scientific Week

WORK EXPERIENCE & ORGANIZATION

Seulanga — Computer Engineering Learning Community, USK Feb 2025 – Nov 2025

Head of IoT Division

- Led the IoT division of Seulanga, a student learning community in the Computer Engineering department at Universitas Syiah Kuala
- Organized and facilitated IoT-focused learning sessions and practical activities for community members

Universitas Syiah Kuala — Banda Aceh, Indonesia Aug 2025 – Nov 2025

IoT Laboratory Assistant

- Assisted students in IoT-based laboratory practicum sessions
- Guided hands-on hardware and sensor integration tasks
- Bridged theoretical concepts with practical implementation

International Service Learning — Sabang, Aceh, Indonesia Jun 2025 – Jul 2025

Participant

- Collaborated with students from USK, UTM, UNSRAT, and UTU
- Conducted educational, social, and environmental activities with the local community

Bank Syariah Indonesia (BSI) — Aceh Branch — Banda Aceh, Indonesia Mar 2025 – Apr 2025

Intern (Kerja Praktek)

One of Indonesia's largest state-owned Islamic banks, formed from the merger of BRI Syariah, BNI Syariah, and Bank Syariah Mandiri.

- Assisted in administrative and data recapitulation tasks
- Supported daily operational activities at the branch level

Universitas Syiah Kuala — Banda Aceh, Indonesia

Feb 2024 – May 2024

Software Engineering Laboratory Assistant

- Assisted and guided students during software engineering practicum sessions
- Evaluated student assignments and laboratory reports
- Supported the learning process for 20+ students per session

PROJECTS

Sunstone — IoT-Based COPD Early Detection System

ESP32 | Gas Sensors (MQ series, MG-811) | Machine Learning (SVM, Random Forest, KNN) | AWS IoT | Flask | MQTT

- Developed a portable breath-analysis device using VOC gas sensors to detect early indicators of COPD in real-time
- Integrated machine learning models for breath-pattern classification with cloud-connected dashboard via AWS IoT
- Presented at PIMNAS 38 — 38th National Student Scientific Week in Makassar, representing Universitas Syiah Kuala

AgriSense — Smart Farming System with Edge Computing

Raspberry Pi | DHT22 | AI Plant Disease Detection | OpenWeather API | MQTT | Flask | 3D-Printed Casing

- Built an edge-computing system for automated irrigation, fertilization, and pesticide spraying based on real-time sensor data
- Integrated AI camera module for plant disease detection with 90%+ target accuracy and a web dashboard for remote monitoring
- Deployed at a local farm in Kopelma Darussalam; finalist and participant at Innovillage 6 by Telkom Indonesia

LaundryApp — Mobile Laundry Management Application

Flutter | Laravel | MySQL

- Built a fullstack mobile application for managing laundry orders, employees, and transactions
- Developed the mobile frontend with Flutter and the backend REST API with Laravel and MySQL

AmbuCare — Emergency Vehicle Priority Traffic Light System

Raspberry Pi | GPS Geolocation | MQTT | HTML / CSS / JavaScript | LED Hardware

- Designed a GPS-based traffic priority system that grants green lights to emergency vehicles approaching an intersection
- Built a real-time web driver app for ambulance GPS tracking, transmitting live coordinates via MQTT to the traffic controller
- Implemented manual override mode and automatic fallback logic on Raspberry Pi with physical LED traffic light hardware

AWARDS & COMPETITIONS

PIMNAS 38 — 38th National Student Scientific Week

2025

Represented Universitas Syiah Kuala at the national student scientific competition held in Makassar.

PKM 2025 — Program Kreativitas Mahasiswa

2025

Developed a scientific project proposal under the national student creativity program by the Ministry of Education.

INNOVILLAGE 6 — Telkom Indonesia Competition	2025
Participated in a national innovation competition organized by Telkom Indonesia.	
IoT Certification — Digital Talent Scholarship	2025
Completed IoT certification by BBPSDMP under the Digital Talent Scholarship, Ministry of Communication and IT.	
SOI Asia Japan APIE Camp — Advanced (Service Design & UI/UX)	2025
Selected for an advanced camp on service design and UI/UX, organized by SOI Asia Japan.	
APIE Camp — Understanding the Internet	2025
Selected as representative to a regional camp in Malaysia by SOI Asia, focused on internet engineering across Asia Pacific.	