

Muhammad Rafae Gill

Backend Engineer · AWS Cloud & AI

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PROFESSIONAL SUMMARY

Backend engineer specializing in AWS cloud architecture and AI automation, with an MEng in Electrical & Electronic Engineering (University of Nottingham). Proven track record of high-impact optimizations — reduced AWS Glue job runtimes from 5 hours to 20 minutes, cutting compute costs 10x. Built MCP integrations and AI-powered automation adopted by ~40 staff, and payment integrations processing 1,000+ transactions daily. Strong foundation in data engineering, IoT, and industrial automation.

EXPERIENCE

Back End Developer

May 2025 – Present

Netmedias · Full-time

Kuala Lumpur, Malaysia · On-site

- Architected and developed backend services and data pipelines across the company's AWS infrastructure, supporting multiple business teams.
- Reduced AWS Glue job runtime from 5 hours to 20 minutes by identifying architectural flaws and implementing concurrency/parallelism optimizations, achieving a **10x cost reduction** in DPU usage.
- Built 5+ custom MCP (Model Context Protocol) integrations — Redshift (BI reporting), Google Ads, Facebook Ads, Notion, and Atlas (in-house deployment tool) — **adopted by ~40 staff** to query data and manage workflows through AI interfaces.
- Designed the company's MCP platform architecture — a standard format every MCP server follows, plus a central **auth & permissions gateway (FastAPI)** where the organisation, users and access levels are configured; all **5 MCP servers** validate every request there before it reaches its data source, serving **~40 users**.
- Designed and deployed n8n automation workflows, saving the team **~1 hour daily** by automating revenue-critical checks that were previously performed manually.
- Built a real-time monitoring and alert system for revenue-critical tasks, where each undetected failure cost **~USD 30/day** compounding until caught.
- Developed multiple RESTful APIs powering AI chatbots, content portals, user/subscription management, and front-end landing pages.
- Integrated 4 telco billing APIs across multiple countries — processing **1,000+ transactions daily** on the primary integration alone — liaising directly with external partners to enable subscription-based payment processing.

R&D Engineering Intern — Malaysian Smart Factory 4.0

Jun – Sep 2023

Selangor Human Resource Development Centre (SHRDC) · Internship

Shah Alam, Selangor, Malaysia

- Integrated Node-RED for factory automation workflows in an Industry 4.0 training environment.
- Developed SCADA applications for real-time monitoring of industrial systems.
- Programmed VFD controls for equipment management and PLC systems for process optimization.
- Implemented Digital Twin VR simulations for factory systems visualization.

EDUCATION

MEng — Electrical and Electronic Engineering with Honours

2023 – 2024

University of Nottingham Malaysia

Upper Second-Class Honours (2:1) · GPA: 3.8 / 4.0

Cambridge International A Levels*Al Noor International School · Grades: A*, A, A***TECHNICAL SKILLS**

Languages	Python, Java, JavaScript, PHP, SQL, C/C++, HTML, CSS
Frameworks	FastAPI, Flask, Laravel, Node.js, Tailwind CSS, Pandas, NumPy
AWS	Lambda, DynamoDB, Athena, Redshift, Glue, S3, EC2, CloudWatch, SQS, SNS, SES, Firehose, API Gateway, CloudFront
Databases	MySQL, DynamoDB, Amazon Redshift, Redis
AI & Automation	MCP Integrations, n8n, AI Chatbot APIs, Process Automation, Machine Learning
IoT & Industrial	Node-RED, SCADA, PLC Programming, VFD Controls, Digital Twin VR
Tools	Git, Docker, Postman, MATLAB, AutoCAD, STM32, Xilinx

PROJECTS**Content Portal — mixsmans.com****Jan – Jul 2026 · Live***Netmedias*

- Built and launched a full-stack content portal (front end and backend) for subscription management and content delivery, using PHP, CSS and AWS backend services.

Community Sports Club Platform — onthemovebh.com**Sep 2026 · Live***On The Move — Community Sports Club, Bahrain · Freelance*

- Designed, built and launched the club's community platform end to end as a freelance project — front end, backend and member accounts.
- Serves **~70 users** running **weekly events** — members host events, take bookings and pay by QR; member profiles link through to their Instagram.

Efficient Campus Energy Monitoring & Optimization — IoT + AI/ML**2023 – 2024***Final Year Project · University of Nottingham Malaysia*

- Implemented IoT infrastructure for real-time campus energy monitoring.
- Applied AI and machine learning to analyse power consumption data, identifying an estimated 30% energy savings in a pilot deployment on a campus section.

UAV Dogfighting and Simulation: Drone Collaboration**2022 – 2023***University of Nottingham Malaysia*

- Designed and simulated an autonomous drone dogfighting environment applying game theory for decision-making.

AWARDS & CERTIFICATIONS

- **High Achievers Scholarship** — 25% entrance scholarship for 3 A's at A Level (Aug 2020)
- **s-CPD Achiever Award** — University of Nottingham (Jul 2024)
- **MATLAB Onramp** — MathWorks (Feb 2024)

VOLUNTEERING & LEADERSHIP

- **Event Manager — Institution of Engineering and Technology (IET)**, University of Nottingham Malaysia (Oct 2021 – Apr 2024) — Progressed from Apprentice → Secretary → Event Manager over 2.5 years, leading event planning, budgeting, and execution for technical workshops and seminars.
- **Student Ambassador**, University of Nottingham (2021–2024) — Guided prospective students during campus tours and open days.

- **Event Facilitator**, University of Nottingham (2022–2023) — Organized FOSE Merdeka Lectures (500+ participants from 10 schools) and STEM Carnival 2023 (700 students from 13 schools over 3 days).