

VIRESH NAGOUDA

AI & IoT Engineer · Python | Android | React Native | AWS | Azure

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E-Portfolio: vnagouda.github.io/E-Portfolio

PROFESSIONAL SUMMARY

I'm a Computer Engineering graduate who loves turning data, sensors and code into practical products. From training vision models that monitor fish health to crafting Kotlin and React Native apps, I enjoy building end-to-end solutions that surface real-time insights while keeping costs down. I'm quick to learn, comfortable across Python, AWS and Azure, and keen to join a team where I can contribute, grow and keep refining my craft.

CORE SKILLS

- **Programming & Scripting** · Python · Java · C++ · Kotlin · JavaScript/Node.js
- **Mobile Development** · Android (Kotlin, Jetpack Compose) · React Native · Flutter
- **Cloud & DevOps** · **AWS** (EC2, S3, Lambda, DynamoDB, Amplify) · **Azure** (ASA, ADX, ADB) · Docker · GitHub Actions
- **AI / ML** · TensorFlow · PyTorch · YOLOv8 · CNNs · LLMs/RAG · Prompt Engineering
- **Data Engineering** · Pandas · NumPy · SQL / PostgreSQL · Apache Kafka · Spark · Airflow
- **IoT & Embedded** · Raspberry Pi · Arduino · MQTT · Sensor Fusion · Edge AI
- **Tooling & OS** · Git · Linux · VS Code · Figma
- **Soft Skills** · Problem-Solving · Analytical Thinking · Collaboration · Technical Communication

EXPERIENCE

Intern – Tata Consultancy Services (TCS), Malaysia | Aug 2024 – May 2025
(10 months)

- Co-built **AquFish**, an IoT-driven aquaculture platform connecting Raspberry Pi sensor nodes to AWS Amplify, Cognito & DynamoDB, enabling secure real-time telemetry for 150+ data points per minute.

- Developed TensorFlow models for fish health detection & growth prediction; deployed on AWS EC2 with auto-scaling, achieving **94 % mAP** and reducing manual inspections by **40 %**.
 - Authored a cross-platform mobile app in **Jetpack Compose Kotlin Multiplatform**, presenting live metrics and push alerts; raised farmer engagement by **30 %**.
 - Implemented cost-optimised cloud architecture, cutting idle compute spend by **≈ RM1.2k/mo**.
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PROJECTS

Personal Projects

Multi-Cloud Café Ordering Platform – React.js · Node.js · Firebase · Azure SQL

Built a responsive food-ordering web app with role-based portals (customer, staff, admin) and real-time order tracking. CI/CD via GitHub Actions & Docker; live analytics dashboard highlights top-selling items and peak hours.

Queue Estimation System – Next.js · Azure Stream Analytics (ASA) · Azure Data Explorer (ADX) · Azure Database (ADB) · Raspberry Pi

Built a full-stack IoT queue-length monitoring solution: Raspberry Pi camera feeds processed in real time via **Azure Stream Analytics**, persisted in **Azure Data Explorer**, batch-analysed in **Azure Databricks**, and visualised through a responsive **Next.js** dashboard. Achieved ± 1 -person accuracy at 8 FPS and enabled data-driven staff allocation.

YOLOv8 Real-Time Fish Detection – Python · OpenCV · Roboflow

Curated custom dataset (>5 k images) and trained YOLOv8-seg model achieving **92 % mAP@0.5**; deployed on Jetson Nano for edge surveillance with 25 FPS inference.

Miscellaneous Makerspace Builds

- Digital Clock (logic-gate simulation, Multisim)
- Arduino Smoke-Detection Alarm (MQ-series sensors)
- Java Swing Cafeteria Billing System

Academic Projects

AI-Powered Environmental Monitoring Platform (Capstone GDP) – AWS · TensorFlow · NeRF 3D

Led 4-member team to integrate water-quality sensors & live video streams with 3D NeRF visualisation. Delivered predictive insights for harvest planning, improving feed efficiency by **18 %** in simulation.

Waste Management & Sustainability Analytics – Pandas · Scikit-learn · Matplotlib

Analysed World Bank "What a Waste" dataset; performed K-Means clustering & regression to model recycling trends across 150 countries.

EDUCATION

Dual Degree – B.Eng (Hons) & M.Eng in Computer Engineering

Asia Pacific University (Malaysia) & De Montfort University (UK) · **June 2025**

- CGPA: 3.0/4.0

CBSE 12th (A-Levels Equivalent) – Royale Concorde International School, Bangalore · 83 %

ICSE 10th – Vibgyor High, Bangalore · 91.4 %

CERTIFICATIONS & TRAINING

- Generative AI Foundations – Google x Kaggle (2024)
 - Kaggle Courses: Intro & Intermediate Machine Learning, Data Visualisation (2023)
 - JLPT N5 Japanese (2022)
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EXTRACURRICULAR & INTERESTS

- 3rd Place – Bowling & Cricket, APU Sports Carnival (2023)
- Football & Badminton enthusiast
- Volunteer teaching Python basics to freshmen