

Kaviraj Ananthapuri Palanivel

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PROFILE

Backend-focused Master of IT student (GPA 3.875/4.0) with industry experience building NestJS and RabbitMQ microservices. Strong algorithmic foundation (300+ LeetCode solved) and hands-on experience deploying software across multi-cloud platforms using Docker, Kubernetes, and Infrastructure-as-Code tools.

EDUCATION

Master of Information Technology — Monash University, Melbourne | GPA 3.875/4.0 *Expected 2026*
Bachelor of Computer Applications — Amrita Vishwa Vidyapeetham | CGPA 9.28/10.0 *2020 – 2024*
Exchange Semester, Informatics Engineering — Universitat Politècnica de València *2023*

TECHNICAL SKILLS

Languages: Java, Python, Kotlin, JavaScript, TypeScript, C++, C#, SQL
Backend & Architecture: FastAPI, Node.js, NestJS, Pydantic, RabbitMQ, Microservices, System Design, DSA
Cloud & DevOps: AWS, GCP, Docker, Kubernetes, Terraform, Ansible, CI/CD, Git, Agile/Scrum
Data, Testing & Mobile: PostgreSQL, MongoDB, Prisma, Firebase, JUnit, Mockito, SonarQube, Locust, Jetpack Compose, TensorFlow Lite

PROFESSIONAL EXPERIENCE

Associate Software Engineer Trainee — NeolTO, Trivandrum, India *08/2024 – 11/2024*

- Built scalable microservices with NestJS and RabbitMQ, implementing event-driven communication between distributed services to improve throughput and reduce API bottlenecks.
- Applied Clean Code principles and Test-Driven Development within an Agile team to improve the reliability and maintainability of the codebase.

SELECTED PROJECTS

WildQuest — Gamified Wildlife Discovery App | Kotlin, Compose, FastAPI, TensorFlow Lite, Firebase *2026*

- Built an Android app for discovering, photographing, and logging real animals nearby, with on-device species recognition via a TensorFlow Lite model (MobileNetV2, transfer learning) and a custom FastAPI backend serving location-specific animal data.
- Added location-aware quests on Google Maps (custom markers, polylines, live tracking), background step tracking via Android WorkManager, Firebase authentication, and offline persistence with Room.

CloudEco — Marine Plastic Detection Service | FastAPI, Kubernetes, Terraform, Ansible, GCP *2026*

- Built a container-orchestrated ML inference service (FastAPI + YOLOv8m) detecting marine plastic via REST APIs on a highly available GCP Kubernetes cluster provisioned with Terraform and Ansible; sped up inference with OpenVINO INT8 and load-tested using Locust.

byteSized — Telehealth Platform (MedHack 2026) | System Design, AI Integration, Prototyping *2026*

- Designed and pitched a telehealth platform with AI-based diet tracking and patient assistants; leading product strategy, system design, and high-fidelity prototyping through the pre-implementation phase.

Monash Merchant Supermarket System | Java, Layered Architecture, OOP *2025*

- Architected a loosely coupled layered system in Java using manual dependency injection and polymorphism, with role-based access control and a custom JSON persistence engine managing cross-file entity relationships.

PTV Bus Transport Analysis, Greater Melbourne | SQL, PostGIS, QGIS, Docker *2025*

- Built an ogr2ogr ETL pipeline ingesting 10,290+ mesh-block records into PostGIS and assessed transport equity via a service-to-population model, optimised using GIST spatial indexes.

Access Key & Token Information Services | NestJS, RabbitMQ, Prisma, PostgreSQL, Docker *2024*

- Built two NestJS microservices for access-key management and Web3 token retrieval over RabbitMQ, with key generation, rate limiting, and TTL validation backed by Prisma/PostgreSQL and a request guard enforcing access control.

Address Management System | NestJS, RabbitMQ, Docker, TypeScript *2024*

- Designed a microservice system with separate User, Address, and Email services coordinated via RabbitMQ, triggering automated email notifications on address creation.

CERTIFICATIONS & AWARDS

Certifications: AWS Certified Cloud Practitioner, AWS Academy Graduate, Python for Data Science, AI & Development
Awards: Highest Grade Commendation (Java, Monash FIT), Excellence in Teamwork, Academic Excellence