

# Karthik Thyloor Mahesh

Athlone, Ireland | +353 894175038 | [karthiktm2804@gmail.com](mailto:karthiktm2804@gmail.com) | [Github](#) | [Portfolio](#) | [LinkedIn](#)

## PROFILE

Software Engineering graduate student in Cloud Native Computing with strong foundations in Linux, backend development, cloud-native systems, and containerized applications. Hands-on experience with Java, Python, RESTful APIs, Docker, CI/CD pipelines, and AWS, along with academic and research exposure to Kubernetes, distributed systems, and serverless architectures. Motivated to build reliable, scalable software systems and contribute to high-quality engineering teams.

## TECHNOLOGY SKILLS

- **Languages and frameworks :** Java, Python, JavaScript, TypeScript, HTML/CSS, Golang (basic)
- **Frameworks & Libraries :** Spring Boot, Angular, React, Node.js, Express, Hibernate, Boto3
- **Databases and ORM :** MySQL, PostgreSQL, MongoDB, DynamoDB (academic), Hibernate
- **CI/CD, VC and Messaging System :** Jenkins, Git, GitHub, GitLab, Jenkins, GitHub Actions (basic), Docker, Kubernetes, AWS (EC2, S3, IAM, Lambda – fundamentals), Linux (Ubuntu, Amazon Linux), Kafka (basic)

## INTERNSHIP EXPERIENCE

### June 2023 – September 2023 | Rooman Technologies | Backend Development Intern

- Developed and maintained backend services for real-time web applications.
- Designed and implemented RESTful APIs and integrated MongoDB and MySQL databases.
- Participated in code reviews, improving code quality, performance, and maintainability.
- Applied OOP principles, data structures, and design patterns in production code.
- Worked in a Linux-based development environment using Git for version control.

### August 2022 - September 2022 | KnowX Innovations | Full Stack Web Development Intern

- Built a Student Result Management System using Java, HTML, CSS, PHP, and MySQL.
- Integrated REST APIs to connect frontend and backend components.
- Performed unit testing with JUnit to ensure reliability and correctness.
- Collaborated using Agile practices and Git-based workflows.

## PROJECTS

### Serverless Architectures for Modular AI Inference Pipelines

Master's Research Project – TUS Athlone

- Designed event-driven, modular AI inference pipelines using AWS Lambda and Knative (Kubernetes).
- Analyzed cold start latency, autoscaling behavior, CI/CD readiness, and orchestration trade-offs.
- Studied AI inference workloads (lightweight ML, CNNs, transformer-based models) from a cloud-native perspective.
- Proposed hybrid serverless architectures aligned with future AI platforms and distributed inference.

### Cloud-Based Collaborative Video Editing Platform

Distributed Systems Research Project

- Designed a cloud-native, real-time collaborative system using microservices architecture.
- Implemented Git-style version control for multimedia assets using AWS S3 versioning and

DynamoDB.

- Proposed WebSocket-based real-time synchronization and GPU-accelerated distributed rendering.
- Evaluated system performance under concurrent workloads and cloud scalability constraints.

## **Restaurant Management System**

*Java Application Project*

- Developed a Java-based backend application using OOP principles.
- Implemented custom exception handling, file-based logging, and internationalization (i18n).
- Used Git for version control and structured project management.

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## **EDUCATION**

### **2024-2025 | Technological University of the Shannon**

Master of Science in Software Design with Cloud Native Computing

### **2020-2023 | Visvesvaraya Technological University, Belagavi, Karnataka**

Bachelor of Engineering in Electronics and Communication & Engineering