

Tharindu Lakshan

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🌐 TharinduNanayakkara28 in Tharindu Nanayakkara 📁 Portfolio: tharindun.online

About Me

Enthusiastic Computer Engineering Graduate with a strong foundation in AI, full-stack web development, and cloud-native systems. Experienced in real-world projects and passionate about building scalable, user-focused applications, with a security- and reliability-minded approach and the ability to adapt quickly in dynamic environments. Eager to grow by contributing to impactful development work, integrating AI capabilities where they add value.

Education

University of Peradeniya

2022 - 2026

BSc.Eng(Hons.) Specializing in Computer Engineering

GPA : 3.84/4.00 - First Class

Royal College, Colombo 07

2012 - 2020

G.C.E. Advanced Level Examination

3As

Experience

Software Engineer Intern in AI Integration team – WSO2 (Pvt) Ltd.

Apr. 2026 – Present

1. Streaming Support for WSO2 Integrator AI Libraries.

- Designed, implemented, and tested first-class token-by-token AI streaming across the WSO2 Integrator ecosystem.
- Introduced a **unified streaming abstraction** with vendor-specific implementations for **7 LLM providers**, keeping full backward compatibility with existing non-streaming APIs.

2. Google Gemini Model & Embedding Provider for WSO2 Integrator AI ecosystem. 🌐 Provider | 🌐 Tests

- Built a Gemini chat and embedding provider for the framework's model-provider interface.

3. Built AI data loaders for the WSO2 Integrator AI ecosystem. 🌐 Blob | 🌐 File | 🌐 Drive

- Enabled loading of documents from Azure Blob Storage, Azure File Storage, and Google Drive into AI pipelines for RAG and downstream processing.

4. Added parallel tool-calling support across model providers.

- Implemented concurrent tool execution for OpenAI, Azure OpenAI, and Anthropic providers, cutting latency for multi-tool agent workflows.

5. Expanded AI Support. Added Claude Opus 4.7/4.8 support and raised output-token limits across 7+ providers.

- Technologies: Java, LLM, Azure, Embeddings, SSE, RAG, MCP, Git, Apache Tika, Apache POI

Undergraduate Teaching Assistant – Dept. of Computer Engineering, University of Peradeniya 2023 – 2025

- Served as a Casual Instructor for **CO1010** – Programming for Engineers I, **GP106** – Computing, **CO225** – Software Construction, and **CO322** – Data Structures & Algorithms.

Research

1. Security Testing and Threat prediction for Wi-Fi 7 MLO - Group | 🌐 Repo | 🌐 Web Page

- Analyzing the Wi-Fi 7 MAC **backoff mechanism** across different counter states to uncover protocol-level vulnerabilities.
- Identifying potential attack surfaces in **Multi-Link Operation (MLO)** and designing mitigation strategies to strengthen overall Wi-Fi 7 security.
- Contribution: Research gap analysis, GNN-based threat prediction implementation, and dashboard design.
- Technologies: ns-3, C++, Python, Kafka, TimescaleDB, Grafana, Docker, Containerlab

Projects

1. LIGHTIFY – Smart Home Lighting System - Group | 🌐 Repo | 🌐 Web Page

- **Intelligent home lighting system** that detects room occupancy via sensors and dynamically adjusts lighting, with a **Spring Boot** backend and **MongoDB** deployed on **AWS** for real-time synchronization.
- Used **ESP32** embedded systems with **MQTT** over **AWS IoT Core** for reliable, real-time device control between the lighting circuits and mobile app.

- **Contribution:** Built the React Native mobile app and selected Spring Boot backend features, and designed and assembled the hardware.
 - **Technologies:** React Native, Spring Boot, AWS IoT Core, MongoDB, ESP32, MQTT
2. **Smart Parking Management System – Cloud-Native Microservices Platform - Individual** |  Repo
- A **cloud-native platform** for drivers to find, reserve, and pay for parking on a live map, with real-time availability, overstay alerts, and an operator analytics dashboard for occupancy and revenue.
 - Engineered as an **event-driven system** of 10 Spring Boot microservices over Kafka, with a choreographed reservation→payment Saga, geospatial search, WebSocket updates, and CI/CD to Oracle Cloud.
 - **Technologies:** Java 21, Spring Boot 3.3, Spring Cloud Gateway, Apache Kafka, PostgreSQL/PostGIS, Redis, React 18, Flutter, Docker, GitHub Actions, Terraform, Prometheus/Grafana, JWT, Oracle Cloud
3. **Lakshan Home Collection – E-commerce website - Individual** |  Repo
- **Responsive full-stack e-commerce site** with product search and filtering, built with React 18, Redux Toolkit, and Tailwind CSS.
 - Spring Boot backend with MongoDB Atlas, JWT authentication, and role-based access control, supporting product management and product uploads; deployed to AWS EC2 via a GitHub Actions CI/CD pipeline.
 - **Technologies:** React 18+, Redux Toolkit, Spring Boot 3.x, MongoDB Atlas, JWT, Tailwind CSS, shadcn/ui, GitHub Actions, AWS EC2
4. **CardioGuard – Cardiac Patient Monitoring System - Group** |  Repo |  Web Page
- **Cardiac patient database and health monitoring system** powered by **machine learning** to assess heart-failure probability and overall cardiac risk, built with **Spring Boot** and **React**.
 - Secure **JWT-based**, role-specific dashboards for doctors, patients, and admins.
 - **Contribution:** Developed features across both the **React** frontend and **Spring Boot** backend.
 - **Technologies:** Java, Spring Boot, React, Python, Tailwind CSS, Machine Learning

Technical Skills

- **AI & LLM:** LLM APIs (OpenAI, Anthropic, Gemini, Azure), RAG, MCP, SSE Streaming, Prompt Engineering
- **Cloud & DevOps:** AWS (S3, EC2, IoT Core), Oracle Cloud, Vercel, Docker, GitHub Actions, Terraform, MQTT
- **Languages:** Java, Python, JavaScript/TypeScript, C
- **Web & Backend:** React, React Native, HTML, CSS, Tailwind CSS, Spring Boot
- **Databases:** MySQL, PostgreSQL, MongoDB
- **ML & Data:** TensorFlow, NumPy, OpenCV, Matplotlib, Logistic Regression, Neural Networks
- **Concepts:** Object-Oriented Programming, Data Structures & Algorithms, Network Security, Embedded Systems
- **Tools & Version Control:** Git, GitHub, VS Code, IntelliJ, Postman, Android Studio, Cisco Packet Tracer, Wireshark

Extracurricular Activities

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| 1. Assistant Secretary – Hackers' Club, University of Peradeniya | 2023–2024 |
| Organized the PreCoders 2024 6-hour coding competition and competed in the event. | |
| 2. Member – Rotaract Club, University of Peradeniya | 2023–Present |
| 3. Member – AeroGenz Club, University of Peradeniya | 2024–2025 |

Certificates

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| ▪ AWS Cloud Practitioner Essentials - (AWS) | ▪ AI/ML Engineer – Stage 1 and 2 - SLIIT UNI |
| ▪ Introduction to Cybersecurity - CISCO | ▪ JavaScript Basics - Coursera |
| ▪ Python Data Structures - Coursera | ▪ Programming for Everybody (Python) - Coursera |
| ▪ C for Everyone: Programming Fundamentals - Coursera | ▪ Fundamentals of Java Programming - Coursera |

References

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| ▪ Sasindu Alahakoon – Associate Technical Lead,
WSO2 Pvt Ltd
Colombo 04, Sri Lanka
sasindu@wso2.com +94 76 590 6142 | ▪ Dr. Isuru Nawinne – Senior Lecturer
Dept. of Computer Engineering
University of Peradeniya, Sri Lanka
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