

Kalana Sandakelum

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PROFESSIONAL SUMMARY

IT undergraduate at the University of Moratuwa building distributed, production-grade systems end to end – Java/Spring Boot and Go back-ends, React/Next.js front-ends – load-tested before shipping. Most at home in back-end and system design: concurrency control, data consistency, secure APIs and event-driven services, backed by solid DSA fundamentals.

PROFESSIONAL EXPERIENCE

Software Engineering Intern (Part-Time) – Ryzera Technologies (Pvt) Ltd

Sri Lanka (Remote) · Feb 2025 – Feb 2026

- Designed and built a central Identity & Authentication Server with Spring Security 6 and OAuth2.
- Developed and shipped RESTful APIs and microservices with Spring Boot 3 and Java 21.
- Dockerized services for dev/test/prod parity; shipped in 2-week Agile sprints with code reviews.
- Built AI voice agents that automate first-line customer support and deflect repetitive tickets.
- Delivered responsive Next.js dashboards for enterprise data visualization and management.

EDUCATION

- **University of Moratuwa**
B.Sc. (Hons) in Information Technology & Management (CGPA: 3.71 / 4.0) Katubedda, Sri Lanka
2024 – 2028
- **Walasmulla National College**
GCE Advanced Level (2022): Walasmulla, Sri Lanka
2012 – 2022
Z-score 1.498 | GCE Ordinary Level: 9 A passes

PROJECTS

ApexTick: Real-Time Event Ticketing Platform git

Technologies: Java 21, Spring Boot, PostgreSQL, Liquibase, Redis, RabbitMQ, Keycloak, Next.js, Docker, AWS (EC2, S3), WSO2 API Manager, Terraform

- Engineered a distributed ticket reservation system for high-contention flash sales, where thousands race for one seat and exactly one wins – no double-booking, no slowdown. Live seat-map booking and payments; k6 load-tested for correctness under concurrency.
- Enforced single-winner seat claims via one atomic conditional UPDATE at the PostgreSQL row level – no app-level locks – correct across horizontally scaled, stateless instances.
- Implemented self-expiring seat holds with **Redis** TTL; built an event-driven **RabbitMQ** notification service that emails confirmations and stores ticket PDFs in AWS S3; secured the API with **Keycloak OAuth2/OIDC** (stateless JWT), documented via OpenAPI/Swagger.
- Built the full Next.js/React UI and admin panels; containerized with Docker, provisioned with **Terraform** (IaC), deployed behind a **WSO2 API Manager** gateway on AWS.

Durdans Hospital – Laboratory Information Management System git

Technologies: Java 21, Spring Boot 3.5, PostgreSQL, Kafka, Keycloak, AWS S3, Next.js, TypeScript, Docker (University 2nd-year group project, mentored by IFS Sri Lanka)

- Co-developed an enterprise LIMS covering the full laboratory lifecycle on a **Gradle multi-module** Java 21 / Spring Boot backend with PostgreSQL, **Kafka** and a Next.js front-end.
- Integrated Keycloak (OAuth2/OIDC) to secure all APIs with role-based access; built the patient module with rate-limited SMS/email verification, AWS S3 uploads and notifications.

RunMesh – Fault-Tolerant AI-Agent Execution Runtime in Go

Technologies: Go, PostgreSQL, Kubernetes (client-go, kind), Google Gemini API, REST/SSE, Prometheus, Grafana, Next.js, TypeScript, Docker, GitHub Actions, k6

- Built a **Go runtime** that turns a plain-English goal into a validated DAG via Gemini structured output and runs each step as an isolated, network-denied **Kubernetes Job**.
- Made PostgreSQL the job queue (SKIP LOCKED) with leases, fencing tokens, retries and idempotency keys; tests SIGKILL a live server and drain a Kubernetes node with no lost work.
- Streamed a live event timeline over SSE, exposed hand-written **Prometheus metrics for Grafana**, and built a Next.js console with an execution waterfall.

AI Voice Agent Platform (Multi-Industry) – Conversational AI

Technologies: Python, Google Gemini, Speech-to-Text/TTS, Asterisk PBX, Dialog SIP Trunk

- Developed a production voice AI agent platform (healthcare, reservations, sales) that answers real calls and completes tasks like appointment booking via Gemini tool-calling, with live human transfer and DTMF NPS surveys, over a **Dialog SIP trunk / Asterisk PBX**.

Vehicle Number-Plate Detection & Smart Car-Parking System

Technologies: Python, YOLO (Roboflow), OCR, TensorFlow, Docker, OpenAI

- Built number-plate recognition (Roboflow-trained YOLO + OCR) and a smart car-parking system with duration tracking, automated billing and a live occupancy/unauthorized-access dashboard.

TECHNICAL SKILLS

- **Languages:** Java, Go, TypeScript, JavaScript, Python, SQL, HTML/CSS
- **Backend:** Spring Boot, Spring Security, REST APIs, OAuth2, Swagger/OpenAPI, Node.js, Express.js
- **Frontend:** React, Next.js, Tailwind CSS, Bootstrap
- **Databases & Caching:** PostgreSQL, MySQL, MongoDB, Redis, Liquibase
- **Messaging & Integration:** RabbitMQ, Kafka, Keycloak, WSO2 API Manager
- **DevOps & Cloud:** Git, Docker, Kubernetes, GitHub Actions (CI/CD), Terraform, AWS, Vercel, Maven, Gradle
- **Testing:** JUnit, Testcontainers, k6 (load testing), Postman
- **Core CS:** Data Structures & Algorithms (DSA), OOP, Design Patterns

CERTIFICATIONS

- Java and Object-Oriented Programming – University of Pennsylvania [↗](#)
- Programming with JavaScript – Meta [↗](#)
- Introduction to Front-End Development – Meta [↗](#)
- Docker Foundations Professional – Docker [↗](#)

ACHIEVEMENTS

- Finalist: IDEALIZE 2026 Finalist: IDEALIZE 2025 Participant: WSO2 Ballerina

EXTRACURRICULARS

- Organizing Committee: International Conference on Information Technology Research 2026
- Member: FIT Moments • Member: IES Lab, University of Moratuwa

REFERENCES

Mr. B. H. Sudantha

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