

Lasantha Kulasooriya

Senior Machine Learning Engineer | Applied AI & Agentic Systems | Enterprise AI Integration

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SUMMARY

Senior Machine Learning Engineer with hands-on experience designing autonomous agent decision logic and integrating AI systems into production, enterprise-style workflows. Track record translating complex operational processes, robot mission behavior, insurance risk/recommendation rules, financial document workflows into deployed agent-driven systems using behavior-tree orchestration, LLM/voice APIs, and enterprise integration patterns. Comfortable partnering with SMEs to map business processes into technical logic and iterating on agent behavior from real-world feedback.

TECHNICAL PROFICIENCY

AI Agents & Orchestration: BehaviorTree.CPP, Autonomous Decision Logic, Multi-Agent System Design, Rule-Based Decision Systems

LLM & Generative AI: OpenAI, Anthropic, Mistral-7B, Hugging Face Transformers, RAG Pipelines, Vector Databases (FAISS, Qdrant, ChromaDB), Prompt Engineering

Voice & Realtime AI: Deepgram, ElevenLabs, LiveKit

NVIDIA Edge AI & GPU Computing: DeepStream, VPI, TensorRT / TensorRT-LLM, CUDA/CuPy, NvBlox, Jetson AGX Orin

Backend & Enterprise Integration: FastAPI, REST APIs, MQTT, WebSockets, PostgreSQL, MongoDB, SQL/NoSQL

Languages, Robotics & DevOps: Python, C++, JavaScript/TypeScript, ROS 2, Docker, CI/CD, Git

EXPERIENCE

Senior Machine Learning Engineer

Feb 2026 – Present

Hype Insight Global

Colombo, Sri Lanka

- Designed and built a C++/ROS 2 agent orchestration layer (BehaviorTree.CPP) for the Manriix robot that translates mission-level operational rules into autonomous decision logic, coordinating safety, navigation recovery, task sessions, and device state across multiple subsystems in production.
- Built a cloud-edge AI agent platform for Manriix integrating multiple AI/LLM APIs (language, speech-to-text, text-to-speech) behind a unified agent runtime, with MQTT-based deployment sync and real-time device telemetry.

Data Scientist

Oct 2024 – Feb 2026

Hype Insight Global

Colombo, Sri Lanka

- Developed computer-vision and sensor-fusion pipelines for the Manriix robot that convert multi-camera perception data into autonomous navigation and task-selection decisions via rule-based scoring logic.
- Built ROS 2 service integrations connecting perception, camera, and navigation subsystems into one coordinated automation workflow.

Associate Data Science and AI Engineer

Jul 2024 – Oct 2024

Janashakthi Insurance (JXG)

Colombo, Sri Lanka

- Translated insurance business rules into a machine-learning-based personalized recommendation system, working directly with SMEs to convert portfolio/policy data into decision logic.
- Built a deep-learning claim-prediction model converting policyholder onboarding data into risk-decision logic, achieving 65%+ evaluation accuracy.

Intern Data Science and AI Engineer

Jan 2024 – Jun 2024

Janashakthi Insurance (JXG)

Colombo, Sri Lanka

- Built a real-time KPI pipeline and decision-logic-driven leaderboard for a company-wide sales competition, streaming ranked results into a business-facing web app.
- Contributed to a real-time, cross-department insurance KPI dashboard unifying multiple data sources into one operational reporting system.

KEY PROJECTS

Autonomous Mission Orchestration Agent for Robot Safety & Recovery

Manriix Robot

C++17 · ROS 2 · BehaviorTree.CPP · Nav2 · GTest · Groot2 · SQLite

Hype Insight Global

- Built a C++ ROS 2 BehaviorTree.CPP mission orchestrator for the Manriix robot, coordinating safety, voice interruption, navigation recovery, task sessions, docking behavior, and persistent mission state as an autonomous agent decision layer above independent subsystems.
- Designed preemptive agent behavior policies with fail-closed safety checks, priority-based interruption/resume routing, and explicit recovery paths, backed by atomic state persistence and automated behavior-contract tests (GTest).

The Small Council: Multi-Agent Platform for Personal Knowledge and Life Management

Python · PostgreSQL · Qdrant · Telegram · Open-Weight LLMs

Personal Project

- In development – architecting a self-hosted, open-source multi-agent platform in Python where specialized agents each own a life domain (knowledge, finance, planning) behind one shared agent contract and platform services (LLM gateway, scheduler, knowledge ingestion, PostgreSQL/Qdrant, dashboard), reachable through Telegram.
- Designed the first agent, an adaptive active-recall tutor over a personal knowledge base, combining FSRS spaced-repetition scheduling, Elo-based per-topic mastery tracking, and rubric-graded LLM feedback for partial-credit grading.

Cloud-Edge Voice AI Agent Platform for Robot Interaction

Manriix Robot

Python · FastAPI · LiveKit · Deepgram · OpenAI · ElevenLabs · MQTT · ROS 2 · PostgreSQL

Hype Insight Global

- Built a Jetson-based cloud-edge voice AI platform for the Manriix robot, integrating LiveKit, Deepgram, OpenAI, and ElevenLabs behind a unified agent runtime with MQTT-based deployment sync and ROS 2 robot-state coordination.
- Designed a local-first deployment architecture synchronizing cloud-managed roles, voices, and knowledge to the edge agent without full runtime rebuilds, with TLS MQTT heartbeats and deployment progress tracking.

E2E Multi-Stage-Intelligent-Financial-Data-Extraction-System

github.com/LasaK97

Python · FastAPI · React · MongoDB · LayoutLMv3 · Table Transformer · Mistral-7B

Public

- Built an end-to-end FastAPI + React financial document extraction system processing PDFs in 30–120s/doc, combining LayoutLMv3, Table Transformer, and Mistral-7B in a 3-stage fallback pipeline to extract 85–95% of line items.
- Automated a manual business process end-to-end with queued batch uploads, status tracking, and metadata validation (currency/rounding) at 90–98% detection accuracy.

EDUCATION

University of Peradeniya

Peradeniya, Sri Lanka

BSc (Hons) in Data Science, Faculty of Science — GPA: 3.65

2019 – 2024

CERTIFICATIONS

Large Language Models (Level 1, Level 2, Level 3) - H2O.ai

Issued Jun 2024

Deep Learning Specialization (5 certificates) - Coursera

Issued Aug 2025

Applied Data Science Module - WorldQuant University

Issued Jul 2024

AI/ML Engineer (Stage 2) - SLIIT

Issued Aug 2023

REFERENCES

Prof. Roshan D. Yapa

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I hereby certify that the above information is true and correct to the best of my knowledge.

05.11.2025



Lasantha Kulasooriya