Hasarindu Perera

AI Engineer · Computer Vision, Reinforcement Learning and Edge AI — Colombo, Sri Lanka

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AI engineer with 3+ years of production AI and computer vision R&D for robots and vehicles at Vega Innovations, promoted from intern to software engineer. I conceived and lead NOVA, an autonomous security quadruped now ready for clients, with a background in reinforcement learning, perception and safe autonomy.

EXPERIENCE

Vega Innovations Colombo — Jun 2023 – present

Software Engineer (AI) — Feb 2025 – present

- Project lead for **NOVA**, an autonomous security quadruped I conceived: took it from idea (Mar 2026) to a client-ready prototype, leading four engineers across perception, speech, navigation and the operator platform.
- Built NOVA's on-robot autonomy: people tracking, authorised-face recognition, LiDAR change detection along patrol routes, mapping and automatic docking.
- Drove NOVA's R&D: benchmarked depth estimation and SLAM on edge hardware, and evaluated world models (V-JEPA) and vision-language-action approaches against proven detection and tracking before choosing what shipped.
- Brought up the autonomous vehicle's perception: Autoware with LiDAR on NVIDIA AGX Orin, monocular depth estimation at about 5% error, and a bird's-eye-view system.

Associate AI Engineer — Nov 2023 – Feb 2025

- Cut FaceRec's hardware cost per device by about 80% by moving it to Rockchip boards with on-device NPU inference, and raised anti-spoofing to about 95% through research on depth, thermal, wavelet and ensemble methods.
- Built a multi-agent simulation and an end-to-end driving pipeline for the autonomous vehicle, plus a sensor-fusion module for LiDAR, radar, camera, GPS and CAN data.
- Developed Go2 quadruped navigation (ROS 2, Nav2, LiDAR SLAM) and RL controllers trained in Isaac Gym; this work became the base for NOVA.

Intern AI Engineer — Jun 2023 – Oct 2023

- Implemented TRPO, PPO, CPO and PCPO from scratch to study safe reinforcement learning for driving (CARLA, MuJoCo, Safety Gym).
- Reached 85% segmentation accuracy turning camera images into bird's-eye-view maps (UNetXST).

heartivVe (Pvt) Ltd Colombo — May 2019 – Jun 2023

Founder and Director

- Founded and ran a software company: delivered 20+ business websites and full-stack products for clients, with 95% test coverage on Node.js work.

SELECTED PROJECTS

QuPrep Open-source Python library, author — 2026

Prepares classical datasets for quantum machine learning: 15 encoding methods, exports to 8 frameworks including Qiskit, PennyLane and Cirq. Ten releases in under three months, a citable Zenodo DOI, listed in QOSF's awesome-quantum-software. quprep.org

Reinforcement learning from scratch Open source — 2023

PPO on Highway-Env, multi-agent DDPG (Unity Tennis), DQN and an intrinsic curiosity module, plus bio-inspired optimisation algorithms. On GitHub.

EDUCATION

BSc Management and Information Technology South Eastern University of Sri Lanka — 2019 – 2024

Diploma in Information Technology University of Moratuwa — 2020 – 2022

Professional Graduate Diploma (HEQ) BCS, The Chartered Institute for IT — 2017 – 2021

SKILLS

ML and RL	PyTorch, TensorFlow, Stable Baselines, Gymnasium, Isaac Gym, OpenCV
Robot software	ROS 2, Nav2, Autoware, LiDAR, SLAM, NVIDIA Jetson
Languages, tools	Python, C++, JavaScript, SQL, Linux, Git, Docker, AWS

RECOGNITION

- AWS DeepRacer Student League finalist: 8th of 21,000+ students — 2022
- DeepLearning.AI Ambassador: ran Pie & AI community events — 2022 – 2026
- Qiskit Advocate, IBM Quantum — Nov 2025 – present
- Certifications: Deep Reinforcement Learning (Udacity), Deep Learning Specialization and Machine Learning in Production (DeepLearning.AI). All 94, verified, at hasarinduperera.com/certifications.

References available on request.