SIVAKSHAN S

Aspiring AI & Autonomous Robotics Researcher • Full Stack Developer • Technical Writer

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PROFESSIONAL SUMMARY

Aspiring AI & Autonomous Robotics researcher with specialized expertise in reinforcement learning, explainable AI, and safety-critical autonomous systems. Completed MSc in Robotics and Artificial Intelligence at University of Aberdeen with First Class Merit research on adaptive autonomous landing using RL and explainable AI. Over 6 years of professional experience as a Full Stack Developer specializing in MERN, MEAN stacks, and React Native, with proven ability to architect scalable web applications and translate complex AI theory into production-ready implementations. Technical and creative content writer with 4+ years creating specialized documentation for several industries as SEO content specialist. Research focus includes RL-based manipulation, adaptive safety monitoring, uncertainty quantification, and human-robot collaboration. Combining strong theoretical foundation with practical development expertise to deliver impactful solutions in autonomous systems and AI applications.

EDUCATION

Master of Science in Robotics and Artificial Intelligence

Jan 2025 – Feb 2026

University of Aberdeen, Scotland, UK

Dissertation: "Adaptive Autonomous Landing Using Reinforcement Learning and Explainable AI" (First Class Merit)

Key Modules (180/180 credits): Data Mining with Deep Learning, Industrial Robot Programming and Learning, Kinematics and Dynamics, Software Agents and Multi-Agent Systems, Applied AI, Intelligent Robotics, Machine Learning, Project Management

Bachelor of Science (Honours) in Software Engineering

Dec 2019 – May 2023

University of Plymouth, UK (via NSBM Green University, Sri Lanka)

Classification: Second Class Upper Division (2:1) • Thesis: Cross-platform travel application serving 5,000+ users

RESEARCH & PUBLICATIONS

Adaptive Autonomous Landing Using Reinforcement Learning and Explainable AI

Author: Sivakshan S. | **Institution:** University of Aberdeen | **Status:** Completed (First Class Merit) • Degree Conferment: February 2026

Contributions: Implemented PPO/DQN/A2C algorithms, integrated SHAP/Captum for explainable AI, developed physics-validated multi-constraint environment, achieved 102% improvement in system survival time, conducted statistical validation (ANOVA, Tukey HSD). **Status:** Manuscript in preparation for journal submission.

KEY RESEARCH & DEVELOPMENT PROJECTS

Autonomous Landing System with Adaptive RL Framework

Jan 2025 – Oct 2025

MSc Dissertation | Python, PyTorch, RL, SHAP, Captum, Gymnasium, TensorBoard, NumPy, Pandas

Comprehensive RL framework integrating PPO, DQN, A2C with explainable AI for safety-critical autonomous landing (First Class Merit). Implemented curriculum learning (102% improvement), multi-constraint environment, statistical validation, uncertainty quantification, and comprehensive evaluation framework.

Multi-Agent Robotic Systems & Computer Vision Pipeline

Technologies: Python, ROS, Deep RL, TensorFlow, OpenCV, CNN, Transfer Learning

Distributed multi-agent systems for collaborative manipulation (85% efficiency improvement). End-to-end vision system achieving 94% accuracy on custom datasets, deployed across 8 industrial applications.

CORE TECHNICAL COMPETENCIES

AI & Machine Learning

Python, TensorFlow, PyTorch, Scikit-learn, OpenCV, SHAP, Captum, Gymnasium, Stable-Baselines3, Pandas, NumPy, Reinforcement Learning, Deep Learning, Computer Vision, Explainable AI

Robotics & Safety-Critical Systems

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Research & Development

Experimental Design, Statistical Validation, ANOVA, Tukey HSD, Performance Benchmarking, Comparative Analysis, LaTeX, TensorBoard, Multi-Agent Systems

Full Stack Development

JavaScript, TypeScript, React.js, Angular, Node.js, Express, MongoDB, HTML5, CSS3, RESTful APIs, Git, GitHub, Bootstrap, MERN Stack, MEAN Stack, React Native

PROFESSIONAL EXPERIENCE

Content Writer

2017 – 2024

International Clients (Remote)

- Created technical documentation for 50+ technology companies
- SEO Optimization for 100+ websites with creative marketing contents and blog articles

Full Stack Developer & AI Researcher

2022 – 2024

Research & Development (Contract)

- Architected ML pipelines for autonomous systems using TensorFlow and PyTorch (102% improvement in system survival time)
- Developed explainable AI frameworks integrating SHAP and Captum for safety-critical applications
- Built scalable web applications with 99.9% uptime using MERN/MEAN stacks

Senior Full Stack Developer

2018 – 2022

Freelance, Sri Lanka

- Implemented computer vision systems using OpenCV (94% accuracy on facial recognition and tracking)
- Developed MERN and MEAN stack applications with 99.9% uptime and 100% customer satisfaction
- Architected scalable AI pipelines for autonomous systems using TensorFlow and PyTorch
- Developed AI-powered chatbots using OpenAI and Dialogflow
- Developed Cross-platform React native mobile applications with 100% customer satisfaction

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Certifications: Deep Learning Specialization • Advanced Reinforcement Learning Methods • Computer Vision and Image Processing • Full Stack Web Development • Technical Writing & Documentation

Languages: English (Fluent/Professional) • Tamil (Native Speaker) • Sinhala (Conversational)

References available upon request • Portfolio and code samples available on request • Open to relocation for research opportunities