

Rusiru Erandaka *AI & ML Engineer*

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Profile

Final-year AI/ML Undergraduate with **1+ year** of production-grade experience in **Computer Vision** and **LLM Orchestration**. Proven track record in deploying optimized models on **NVIDIA Jetson** and building **autonomous RAG pipelines**. Seeking an Associate AI Engineer role to leverage expertise in Agentic workflows and multimodal systems.

AI Experience in -> Agentic AI • Computer Vision • LLM Systems • RAG • Multimodal AI • Edge AI

Skills

Machine Learning

PyTorch, TensorFlow, Scikit-learn, Transformers

LLMs & Generative AI

LoRA, QLoRA, Prompt Optimization, RAG

Data & DevOps

Docker, GitHub Actions, MLflow

Databases

MongoDB, PostgreSQL, SQLite

Agentic AI Systems

LangChain, LangGraph

Programming Languages & Frameworks

Python, Java, FastAPI, Flask, Next.js

Cloud Platforms

AWS (Lambda, EC2, S3 bucket), Vercel

Work Experience

2025/09– 2026/04
Moratuwa, Sri Lanka.
(Onsite)

Intern AI/ML Research Engineer (Computer Vision)

Arthur C. Clarke Institute for Modern Technologies

Train-Elephant collision prevention system (YOLOv8s-seg + NVIDIA Jetson Dev kit + Fast-SCNN)

- Conducted R&D on a **Thermal vision-based** elephant train collision detection system using YOLOv8 and Vision Transformers (ViT), achieving **85.66% accuracy in low-visibility environments**.
- Optimized inference pipelines for **NVIDIA Jetson TX2**, implementing quantization and memory management to meet strict hardware latency constraints.
- Reduced GPU utilization from **23% to 9%** through TensorRT model optimization.
- Built a custom TCP/IP-based gimbal controller by reverse engineering device communication protocols from network packets.
- Engineered a Computer Vision Pipeline for Train Track and Obstacle Detection.

Education

2022/08 – Present

BSc. (Hons) In Electronics & Computer Science.

University of Kelaniya, Sri Lanka.

CGPA: 3.42/4.00

Publications

ICATC 2025 (IEEE)

Erandaka, R., et al.

“Multimodal Browser-Based System for Online Child Safety”

ICATC 2025 (IEEE) | DOI: 10.1109/ICATC68823.2025.11407778

Projects

2026/04 – Present

Autonomous Synthetic Data Factory for Agentic Reward Model Training

Python | LLMs | RLHF | GitHub Actions | Hugging Face | SQLite

- Architected an end-to-end **autonomous pipeline** using **5 LLMs** to generate high-quality synthetic datasets for **RLHF and agentic model** training.
- Designed multi-stage orchestration pipeline. (Task Generation → Execution → Dual Labeling → Validation → Uploading)
- Automated daily dataset publishing to Hugging Face via GitHub Actions. (zero manual intervention)
- Developed real-world data ingestion engine (GitHub, Stack Overflow, research papers) to generate executable ReAct-style tasks across 6 domains.
- Implemented a **constitutional labeling framework** to generate automated reward signals and inter-labeler agreement metrics using LLM-as-a-judge.
- Generated structured agent traces with tool usage logs and failure classifications (hallucinations, safety violations) for reward model training.

Dataset: [Rusiru-erandaka/Agent_Supervisor_Training_dataset](#)

GitHub: [rusiru-erandaka/Autonomous_Agentic_Data_Factory](#)

2026/03 – 2026/04

Automated Market Intelligence Pipeline for UpToDate Sri Lankan Food Price Gathering

(75+ Downloads from 2 weeks)

Python | ETL | GitHub Actions | Hugging Face | PDF Parsing

- Built automated ETL pipeline to ingest and structure daily CBSL commodity price reports for 24 products across 5 markets
- Developed robust PDF parsing system using pdfplumber to handle non-standard encodings and extract structured data
- Recovered 1,200+ days of historical data by replacing unreliable scraping with deterministic URL-based data extraction
- Designed production-ready dataset pipeline with automated publishing to Hugging Face and schema validation for data consistency

Dataset: [Rusiru-erandaka/UpToDate_Srilanka-Food-prices](#)

GitHub: [rusiru-erandaka/Food_dataset_preparation_Pipeline](#)

2025/01 – 2025/09

Multimodal NSFW Content Detection System(Research Project)

Python | YOLOv8 | BigBird | PyTorch | FastAPI | AWS

- Built multimodal content detection system combining BigBird-RoBERTa (97.3% text accuracy) and YOLOv8m (0.899 mAP@50) for image classification
- Designed hybrid deployment pipeline with on-device visual inference and low-latency text analysis via AWS-hosted FastAPI
- Engineered a custom **multithreaded web browser** architecture to enable real-time filtering with <250ms response time while reducing overall system overhead.
- Curated and annotated 27K+ multimodal dataset (text + images) and applied class balancing and augmentation techniques for improved model performance.

Trained Model: [Rusiru-erandaka/Child_safety_bigbird](#)

2025/08 – 2025/10

RAG Based Natural Language Agentic Business Chatbot

Gemini API | LangChain | FAISS | Pinecone | PyPDF

- Built agentic RAG chatbot using LangChain and Gemini 2.5 Flash
- Enabled multilingual queries (Sinhala & English)
- Integrated FAISS and Pinecone for efficient vector retrieval
- Implemented session-based memory for contextual conversations

Certificates

- AWS Cloud Quest Cloud Practitioner
- Docker Training Course for Beginners
- Pandas for Machine Learning Kaggle
- Feature Engineering Techniques Kaggle