KAVINDU LAKSHAN PERERA

AI Engineer | Machine Learning Engineer | Generative AI Developer

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PROFESSIONAL SUMMARY

Detail-oriented and innovation-focused AI Engineer with 4+ years of experience designing, training, deploying, and maintaining machine learning, deep learning, computer vision, NLP, and generative AI solutions. Experienced in building production-ready AI applications for fintech, HR-tech, retail analytics, document automation, and customer service domains. Skilled in Python, PyTorch, TensorFlow, Scikit-learn, FastAPI, LangChain, OpenAI APIs, Azure AI, AWS, Docker, SQL, and MLOps practices. Strong ability to translate business requirements into scalable AI systems that improve efficiency, decision-making, and user experience.

CORE COMPETENCIES

AI/ML

Supervised learning, unsupervised learning, classification, regression, clustering, **recommendation systems, anomaly detection, time-series forecasting**

Deep Learning

CNN, RNN, LSTM, GRU, Transformers, transfer learning, model fine-tuning, object detection, image **classification**

Generative AI

LLM integration, RAG pipelines, embeddings, semantic search, prompt engineering, agent **workflows, chatbot development**

NLP

Text classification, sentiment analysis, named entity recognition, summarization, document Q&A, **information extraction**

Computer Vision

OCR automation, image preprocessing, object detection, OpenCV, YOLO, document image analysis

Deployment/MLOps

FastAPI, Flask, Docker, CI/CD basics, model versioning, API deployment, monitoring, cloud

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services

TECHNICAL SKILLS

Languages

Python, SQL, JavaScript, TypeScript, Bash

Libraries

PyTorch, TensorFlow, Keras, Scikit-learn, Pandas, NumPy, OpenCV, Hugging Face, LangChain,

Matplotlib

Cloud

Microsoft Azure AI, AWS S3/Lambda/SageMaker basics, Google Cloud basics

Databases

PostgreSQL, MySQL, MongoDB, Firebase, Redis, FAISS, ChromaDB, Pinecone

Tools

Git, GitHub Actions, Docker, Postman, Jupyter, VS Code, Linux, Jira, Confluence

Testing/Quality

Unit testing, API testing, data validation, model evaluation, bias checks, error analysis

PROFESSIONAL EXPERIENCE

AI Engineer – NexaLabs Technologies (Pvt) Ltd, Colombo, Sri Lanka

January 2023 – Present

- Develop and deploy AI-powered software modules for document processing, customer support automation, predictive

analytics, and business workflow optimization.

- Built Retrieval-Augmented Generation pipelines using LangChain, OpenAI APIs, vector databases, and enterprise

knowledge sources to support internal search and automated Q&A.

- Designed RESTful AI model-serving APIs using FastAPI and Docker, enabling software engineering teams to integrate ML

outputs into production applications.

- Improved OCR-based invoice extraction accuracy from 82% to 94% through image preprocessing, field-level validation

rules, and model-assisted extraction.

- Collaborated with product managers, QA engineers, and DevOps teams to define acceptance criteria, deployment

workflows, and monitoring requirements for AI features.

- Prepared technical documentation covering datasets, model assumptions, API contracts, evaluation metrics, and

operational limitations.

Machine Learning Engineer – Lanka DataWorks Solutions, Colombo, Sri Lanka

August 2020 – December 2022

- Developed predictive models for customer churn, credit risk scoring, sales forecasting, and user behavior analytics

using Scikit-learn and TensorFlow.

- Performed data cleaning, exploratory data analysis, feature engineering, model selection, hyperparameter tuning, and

evaluation using accuracy, precision, recall, F1-score, AUC, RMSE, and MAE.

Created automated dashboards and model output reports for business stakeholders using Python, SQL, and BI-friendly

exports.

Reduced manual report preparation time by approximately 60% by automating data preparation and model result

generation workflows.

Worked with relational databases and ETL-style scripts to prepare structured datasets for ML model training and

validation.

Data Science Intern - Ceylon Analytics Hub, Colombo, Sri Lanka

January 2020 - July 2020

- Supported senior data scientists in developing machine learning prototypes for retail sales prediction and campaign

segmentation.

- Prepared Python notebooks for EDA, missing value treatment, visualization, feature correlation analysis, and

baseline model comparison.

- Assisted with documentation of experiment results, dataset limitations, and model performance summaries.

SELECTED PROJECTS

AI Document Extraction Platform

Built a document intelligence solution to extract invoice numbers, supplier details, dates, line items, tax amounts, and totals from scanned PDFs and images.

Used OCR preprocessing, validation rules, LLM-assisted extraction, and human review workflows to improve reliability

for finance teams.

Technologies: Python, OpenCV, FastAPI, PostgreSQL, Docker, Azure Blob Storage, OpenAI API.

Enterprise Chatbot with RAG

Developed an internal AI assistant that answers employee questions from policy documents, onboarding materials, and

technical guides.

Implemented embeddings, vector search, source-aware answers, context ranking, prompt templates, and response

guardrails.

Technologies: LangChain, ChromaDB, FastAPI, React, OpenAI embeddings, Azure App Service.

Computer Vision Attendance Verification Prototype

Created a prototype for attendance verification using face detection, image quality checks, and duplicate submission

detection.

Focused on privacy-aware processing, false-positive reduction, and audit logging for HR operations.

Technologies: Python, OpenCV, PyTorch, PostgreSQL.

Customer Churn Prediction Model

Designed a churn prediction model using customer activity, billing behavior, support history, and engagement metrics.

Delivered explainable insights to help marketing teams prioritize retention campaigns.

Technologies: Pandas, Scikit-learn, XGBoost, SHAP, SQL.

EDUCATION

BSc (Hons) in Computer Science - University of Colombo School of Computing, Sri Lanka

2016 - 2020 | Second Class Upper Division

- Final Year Research: Sinhala-English document classification and summarization using transformer-based NLP models.
- Relevant Modules: Artificial Intelligence, Machine Learning, Data Mining, Database Systems, Software Engineering,

Algorithms, Statistics.

CERTIFICATIONS

Microsoft Certified: Azure AI Engineer Associate - 2024

Deep Learning Specialization - Coursera / DeepLearning.AI - 2023

Machine Learning with Python - IBM Skills Network - 2022

Docker for Developers - Udemy - 2022

Prompt Engineering for Developers - OpenAI Learning Path - 2024

ACHIEVEMENTS

Won 2nd place at Sri Lanka AI Innovation Challenge 2023 for an AI-based document automation prototype.

Published a technical blog series on building RAG applications for enterprise knowledge bases.

Mentored 5 junior developers and interns on Python, model evaluation, API integration, and AI project documentation.

Recognized internally for delivering an AI automation module two weeks ahead of schedule.

PROFESSIONAL STRENGTHS

Strong analytical thinking with the ability to connect AI techniques to measurable business outcomes.

Clear communication with technical and non-technical stakeholders.

Practical understanding of model limitations, data quality issues, privacy concerns, and production reliability.

Comfortable working in Agile teams using Jira, sprint planning, code reviews, and cross-functional collaboration.

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LANGUAGES

Sinhala

Native proficiency

English

Professional working proficiency

Tamil

Basic conversational proficiency

REFERENCES

Available upon request.

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