Kashmith Samaranayaka

AI/ML Engineer

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Professional Summary

AI/ML Engineer and accomplished graduate from the **University of Moratuwa**, specializing in **Machine Learning, Data Science, and Software Engineering**. Proven experience in developing production-ready ML systems, with expertise in MLOps, backend development, and research. Passionate about leveraging cutting-edge AI technologies to solve complex real-world problems.

Experience

AI/ML Engineer April 2024 - Present

Jaseci Lab, 5559 Great Hawk Circle, Ann Arbor, MI 48105, USA *Remote*

- Developed and maintained backend infrastructure for Tobu, a social media platform with integrated LLMs for enhanced user interactions and automated content generation
- Implemented machine learning features for user image analysis and conversation processing using advanced NLP techniques
- Built scalable data pipelines using PySpark for user data analysis and feature optimization across the platform

Data Scientist April 2024 - June 2024

Utech Technologies (Pvt) Limited, No 683, Negombo Road, Mabole, Wattala, Sri Lanka *Remote*

- Designed and deployed end-to-end energy forecasting pipeline using MLflow for experiment tracking and model versioning
- Implemented automated ML workflows with Apache Airflow for data ingestion, model retraining, and deployment processes
- Built production-ready API services using FastAPI and Docker for real-time energy prediction and dashboard visualization

Application Engineer Intern January 2023 - July 2023

Synopsys Lanka(Pvt) Ltd, Colombo No. 03, 2/1, Lukshmi Gardens Colombo 08, Sri Lanka *On-site*

- Developed NLP-based search engine with LSTM models for automated email classification and content analysis
- Automated large-file compilation processes and implemented notification systems using Python, Bash, and CSH scripting
- Managed 17 processor designs through custom automation scripts for daily performance assessments and resource optimization

Education

B.Sc. Engineering (Hons.) in Electrical Engineering (Washington Accord accredited)Jan. 2020 - July 2024

University of Moratuwa *Moratuwa, Sri Lanka*

- **Overall GPA: 3.31 - Second Upper Class**
- Dean's List – 2nd semester

GCE Advanced Level (A/L) Examination April 2016 - Dec. 2018

H/Debarawew National School *Sri Lanka*

- Stream: Physical science stream (Combined Mathematics, Physics, Chemistry)
- Results: **3A Passes, Z Score: 2.0495**

Projects

Academic Projects

Self-Adaptive Non-Intrusive Load Monitoring System (NILM) using Deep Learning

- Designed a system using Wavenet and CNN models with custom layers and models for appliance power consumption prediction.
- Integrated ensemble methods for improved prediction accuracy.
- Implemented pseudo-labelling for dynamic adaptation to appliance ageing and wear, reducing the need for retraining.
- Explored transfer learning using pre-trained models with fine-tuning for self-adaptation.
- Published a research paper titled "Self-Adaptive Non-Intrusive Load Monitoring Using Deep Learning" at the 2024 IEEE World AI IoT Congress and won the best-presented paper award.

Industry Projects

Tobu - Social Media Application

- Developed the backend for a social media app integrated with large language models (LLMs) to enhance user interaction and content recommendation.
- Implemented features for user images and conversation analysis using machine learning techniques.
- Worked with LLMs to automate content creation and leveraged PySpark to build data pipelines for user data analysis and feature optimization.

Einstein Pro - Patent Generation and Document Management Platform

- Backend developer for a platform using AI to generate patents and manage documents.
- Developed a RAG-based chatbot leveraging vector databases for fast and accurate information retrieval.

Deep Research Assistant - Agentic AI Application

- Built a production-grade agentic application for answering analytical questions using LangGraph for multi-step reasoning and workflow orchestration.
- Integrated web search and document retrieval capabilities with Chroma vector database for efficient vector search and information retrieval.
- Developed user-friendly Streamlit interface with comprehensive Docker containerization for easy deployment and horizontal scaling.

CashTrack - Smart Expense Tracking Application

- Developed a smart expense tracking application with beautiful analytics and insights using a modern React frontend with TypeScript, Tailwind CSS, and shadcn-ui components.
- Built a powerful Jaseci backend with RESTful API architecture for data management and business logic implementation.
- Implemented comprehensive features including expense/income tracking, data visualization with Victory charts, user profile management, and category-based organization.

Energy Consumption Prediction System

- Designed and deployed an end-to-end energy forecasting pipeline using MLflow for experiment tracking, Apache Airflow for automated data workflows, Docker for containerization, and FastAPI for real-time prediction services.
- Built an interactive Streamlit dashboard to visualize historical consumption, forecasted trends, and key model performance metrics for stakeholder reporting.

FriendZone - AI-Powered Memory Sharing Platform

- Developed a full-stack AI-powered platform that allows users to capture, organize, and share memories through intelligent conversational interfaces.
- Implemented automatic image analysis using OpenAI API to extract contextual information (who, what, where, when) from uploaded photos.
- Built backend using jaclang and jac-cloud framework with comprehensive authentication, memory management, and social networking features.

Lavish Travel And Tours - Travel Agency Website

- Developed a modern travel agency website using React and TypeScript with Vite for optimized build performance, implementing responsive design using Tailwind CSS and shadcn-ui components for enhanced user experience across devices.

Publications

M. S. K. Nisakya, S. M. L. Arampola, W. A. Yasodya, S. Kumarawadu, V. Logeeshan, C. Wanigasekara. **"Self-Adaptive Non-Intrusive Load Monitoring Using Deep Learning."** *2024 IEEE World AI IoT Congress*, 2024. **[Best Presented Paper Award]**

W. A. Yasodya, S. M. L. Arampola, **M. S. K. Nisakya**, V. Logeeshan, S. Kumarawadu, C. Wanigasekara. **"Self-Adaptive Deep Learning Framework for Non-Intrusive Load Monitoring: Addressing Aging Appliance Challenges With Transfer Learning and Pseudo Labeling."** *IEEE Access*, vol. 13, pp. 106524–106539, 2025.

Professional Certifications

Machine Learning Specialization
DeepLearning.AI & Stanford University

TensorFlow: Advanced Techniques Specialization
DeepLearning.AI

Machine Learning Engineering for Production (MLOps) Specialization
DeepLearning.AI

Data Structures and Algorithms Specialization
University of California San Diego

References

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