

THARUN CHANDRAN

EMERGING AI|ML PROFESSIONAL

MACHINE LEARNING·LLM APPLICATIONS·APPLIED AI RESEARCH

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PROFILE

I'm Second-year Computer Science with Artificial Intelligence undergraduate with strong interest in machine learning, agentic AI, LLM applications, and multidisciplinary AI research. Experienced in building AI projects involving computer vision, deep learning, MLOps, RAG systems, and decision intelligence. Passionate about developing practical AI solutions for agriculture, business, and scientific research.

EDUCATION

Higher National Diploma in Computer Science with Artificial Intelligence

National Institute of Business Management - Kandy Innovation Centre | 2024-2026

- Pathway to BSc(Hons) Computer Science with Artificial Intelligence, Developed core knowledge in machine learning, artificial intelligence, Natural Language processing, Robotics, IOT and computer vision, supported by applied AI and research-oriented projects.

G.C.E. Advanced Level

St. Thomas' College, Matale | 2021 - 2023

G.C.E. Ordinary Level

Royal English School, Matale | 2019 -2020

CURRENT RESEARCH

Machine Learning for Computational Drug Discovery

Type: Applied Machine Learning Research in Computational Drug Discovery
Status: Ongoing

- Currently exploring machine learning applications in computational drug discovery, focusing on drug-related prediction, molecular docking & analysis, dataset preparation, model evaluation, and research-based AI workflows.

INTERESTED RESEARCH AREAS

Applied Machine Learning | LLM Applications | Scientific AI | Computational Drug Discovery | AI for Business and Agriculture.

CURRENT PROJECT

ResearchIQ – Production-Grade AI Research Assistant Platform

Type: AI R&D Project
Status: In Development

- Building ResearchIQ, a production-grade AI research assistant using RAG, vector search, and LLMs to search, summarize, answer questions, and generate literature-review insights from scientific papers.

KEY PROJECTS & RESEARCH STUDIES

Tomato Leaf Disease Classification and Severity Analysis System

Github

Type: Deep Learning / Computer Vision / Image Processing
Tech Stack: Python, TensorFlow, Keras, OpenCV, NumPy, Matplotlib, Grad-CAM

- Built an end-to-end computer vision system for tomato leaf disease classification and severity estimation using image processing and deep learning.
- Worked with 3 classes: Early Blight, Late Blight, and Healthy, and compared 3 models and achieved **97.34%** test accuracy with **EfficientNetB0**, compared to 94.08% with **MobileNetV2** and 89.35% with **Custom CNN**.
- Developed a pixel-based severity pipeline to estimate leaf area, diseased area, healthy area, and disease percentage with added Grad-CAM.

Campaign Response Prediction – End-to-End MLOps Pipeline

Github

Type: Machine Learning / MLOps / Model Deployment
Tech Stack: Python, Pandas, NumPy, Scikit-learn, XGBoost, MLflow, FastAPI, Docker, GitHub

- Built an end-to-end MLOps pipeline to predict customer responses to bank marketing campaigns using **45,211** records and **17** features. Compared 3 ML models: **Logistic Regression, Random Forest**, and **XGBoost**.
- Applied class imbalance handling to improve prediction reliability for minority response classes, and Achieved approximately **91%** accuracy with **XGBoost** and evaluated performance on a **9,043**-sample test set.
- Used MLflow for experiment tracking and deployed the model with FastAPI for real-time prediction.

Forest Cover Loss and Urban Expansion Analysis–Satellite Image Study

Github

Type: A Multi -Temporal Satellite Image Processing Analysis & Study | Environmental Monitoring
Tech Stack: Python, Landsat 8, Sentinel-2, Rasterio, NumPy, Matplotlib, NDVI, NDBI, MNDWI

- Developed a multi-temporal satellite image processing workflow to analyze and study forest cover loss and urban expansion from 2015–2025 using **Landsat 8** and **Sentinel-2** imagery for the **Kandy–Kundasale–Digana Mahaweli Corridor**, Sri Lanka.
- Processed **22** seasonal satellite composites across **11** years, using **NDVI**, **NDBI**, and **MNDWI** indices for forest, built-up, and water classification.
- Detected **1.26 km²** localized forest-cover loss and a **44.7%** increase in built-up area from **0.47 km²** to **0.68 km²** between 2015 and 2025. Created change-detection maps, trend charts, and a **2030 linear forecast**, with an abstract prepared for conference/publication submission.

LEADERSHIP & ENTREPRENEURIAL EXPERIENCE

University Ambassador – IEEE Innovation Nation Sri Lanka 2026

- Selected as a University Ambassador representing NIBM, Supported technology awareness, innovation-focused student engagement, and event promotion.

President | Media Club – NIBM KIC

- Led media activities, event promotions, photography, videography, and student engagement content. Coordinated with students and staff to support campus events and communication.

Founder / Photographer – STUDIO 006

- Managed photography services for weddings, portraits, model shoots, and candid photography. Handled client communication, creative planning, editing workflow, branding, and social media content.

REFERENCES

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