DESHAD SENEVIRATHNE

deshadsenevirathne@gmail.com | linkedin.com/in/deshad-senevirathne | https://deshadspace.github.io
Colombo, Sri Lanka | +94 774798982

INTERESTS

Machine Learning | Control Systems | Natural Language Processing | Data Science

EDUCATION

University of Peradeniya *Nov. 2017 – Mar 2023*
BSc in Manufacturing and Industrial Engineering (Hons.)

D.S.Senanayake College - Colombo 07 *2008 – 2016*
G.C.E. Advanced Level Examination
Physics - A, Combined Mathematics - B, Chemistry - A

SKILLS

Programming Languages	Python, SQL, C, MATLAB, R
Tools and Platforms	Git, Docker, Slack, Linux, MS Windows, Mac OS
3D Modeling	SolidWorks, AutoCAD
Graphics	Adobe Premiere Pro, Adobe Photoshop
Languages	Sinahala - Native, English - C1, German - A1

RESEARCH EXPIERIENCE

AI-Driven Remote Characterization and Resource Estimation of SMASS and MITHNEOS Asteroids using RELAB database *Present*
Developing machine learning models to encode and analyze material composition data from NASA's RELAB database for predictive modeling. Training algorithms to estimate asteroid compositions using spectral data from SMASS and MITHNEOS surveys, alongside a separate model for inferring physical parameters from the JPL Small-Body Database. Integrating outputs to perform preliminary resource estimation of target asteroids.

Pest Disease Risk Assessment and AI-Driven Paddy Yield Forecasting Using Open Satellite Data, Weather APIs Historical Data for Sri Lankan Agro Zones *June - Aug 2025*
an AI-driven framework for yield prediction using open satellite imagery, weather API data and historical agricultural datasets specific to Sri Lankan Agro Zones using stacked-ensemble learning.

GRACE-Based Water Storage Predictions in Sri Lanka Using Machine Learning and Down-scaled Spatial Modeling - Independent Research *Jan - July 2025*
In this study, GRACE data from 2004-04-18 to 2025-03-16 were filtered for Sri Lanka. additional features were engineered, a synthetic dataset simulated using linear regression. Three tree-based models were trained then evaluated.

Development Of DOE-based Surface Roughness Prediction System for CNC End Milling Operations *Feb 2023*
Improving predictive accuracy and operational efficiency of CNC end milling operations. This project emphasized statistical analysis, process optimization, and quality control.

PROJECTS

AI-powered Knowledge Graph Pipeline for Satellite Power Systems Fault Diagnosis *2025*

- Developed a customized pipeline that translates basic human troubleshooting inputs into a structured knowledge graph, helping satellite engineers quickly identify faults.
- *Technologies: Python, MistralAI, Serpapi, OCR, RDF, SPARQL*
- *Techniques: Co-reference Resolution, NLP Tokenization, Chunk Based Processing*

Electricity Price and Demand Prediction System - Freelance Work *June 2025*

- Built a deep learning model using RNN + LSTM to forecast hourly electricity price and demand with engineered time-based and power-related features. Used Google Colab for training; fetched remote datasets securely using paramiko and sshtunnel.
- *Technologies: Python, TensorFlow, Keras, scikit-learn, pandas, matplotlib, seaborn, Paramiko, sshtunnel, Colab*

Development of Automatic License Plate Recognition System for Sri Lankan Number Plates - Freelance Work *June 2025*

- Built a YOLOv8 + EasyOCR pipeline to detect and read Sri Lankan vehicle plates with custom logic for provincial codes and multilingual formats (Sinhala/English).
- *Technologies: Python, YOLOv8, EasyOCR, OpenCV, Albumentations*

Satellite Speed and Position Prediction Model *Feb 2025*

- Used machine learning algorithms to predict the positions and speeds of 600 satellites in orbit around the Earth. (The original datasets were obtained from the International Data Analytics Olympiad 2020 (IDAO 2020) Competition, provided by the Russian Astronomical Science Centre.)
- *Technologies: Python, scikit-learn, pandas, matplotlib*

Atomic Energy State Prediction *Feb 2025*

- Built a machine learning model capable of predicting atomic energy states using molecular features derived from quantum mechanical simulations.
- *Technologies: Python, Machine Learning*

Interplanetary magnetic field (IMF) prediction model *Feb 2025*

- This project utilized the OMNI2 data set to predict IMF, which includes hourly mean values of IMF and solar wind plasma parameters measured near Earth's orbit.
- *Technologies: Python, Machine Learning*

EXPERIENCE

Freelance AI Engineer *Present*

- Development and Fine-Tuning of Machine Learning Models, NLP Pipelines.
- *Technologies: Python, scikit-learn, PyTorch, GPT etc*

Mechanical Site Engineer - Dockyard General Engineering Services Pvt. Ltd. *2024-2025*

- Heavy engineering, welding, fabrication, safety assurance, quality control and project management.

CERTIFICATES AND COURSES

Control Systems Analysis: Modeling of Dynamic Systems *Reading*
Issuer : University of Colarado Boulder - Coursera

Introduction To The Space Economy *2025*
Issuer : United Nations Office for Outer Space Affairs (UNOOSA)

Supervised Machine Learning *2024*
Issuer : Standford University & Deeplearning.ai - Coursera

Machine Learning, Deep Learning, Computer Vision, SQL, Pandas *2024*
Issuer : Kaggle

MATLAB ON Ramp, Machine Learning ON Ramp, System Composer ON Ramp. *2024*
Issuer : MATLAB Study Portal

Understanding Research Methods *2024*
Issuer : University of London - Coursera

Introduction to Embedded Systems with Rust , Electrical Systems: Reading Drawings and Schematics, PLC Learning path *2024*
Issuer : LinkedIn Learning

EXTRA-CIRRUCULAR

Vice President of Western Music Association, D.S.Senanayake College. *2014/2015*

Treasurer, Art Circle ,Faculty of Engineering, University of Peradeniya. *2021/2022*

Musician, Producer, Mixing and Mastering Engineer *2013-Present*

REFERENCES

Mr. M. Dharmawardhana
Senior Lecturer
Dept. of Manufacturing and Industrial Engineering
Faculty of Engineering
Univeristy of Peradeniya
mahad@eng.pdn.ac.lk
+94 81 - 239 3651

Ms. Thilini Deshika
Data Scientist
Dialog Axiata PLC
thilini.deshika@dialog.lk
+94 71 324 7828