





DEEGHAYU SUWAHAS ADHIKARI


R&D Engineer @ AltaVision Solar


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 Kadawatha, Sri Lanka

 in/deeghayu

SUMMARY

AI & IoT Engineer building end-to-end intelligent systems that integrate hardware, software, and data-driven intelligence. Experienced in embedded firmware, IoT prototypes, cloud-based deep learning models, and scalable web platforms. Skilled in machine learning, embedded systems, electronics design, and full-stack development. Proven ability to lead projects from concept to production and deliver high-impact, user-centric solutions through interdisciplinary collaboration.

TECHNICAL SKILLS

Languages: Python (Advanced), C++ (Proficient), SQL, TypeScript/JavaScript

AI & Data Science: PyTorch, TensorFlow, Scikit-learn | Pandas, NumPy, OpenCV, Matplotlib | Docker, MLflow, GitHub Actions, AWS SageMaker

Cloud & Infrastructure: AWS, GCP | Terraform, Docker, Git, CI/CD | React, Next.js, Node.js, REST APIs, Nginx | SQLite3, MongoDB, Firebase

Embedded Systems & IoT: ESP32, Raspberry Pi, Arduino, PLCs | Firmware (C++), PlatformIO, FreeRTOS | MQTT, OPC UA, MODBUS, LoRa, Bluetooth/BLE

EDUCATION

2025.05 - 2026	Master in Data Science and AI (Expected)	Faculty of Engineering, University of Moratuwa
2024.07 - 2025.08	Master in Information Technology GPA: 3.9/4.0 (Graduation Pending)	Faculty of Science, University of Kelaniya
2021.07 - 2024.04	BSc in Physical Science (CS, Electronics, Physics) GPA: 3.31/4.0 (Graduated 26.04.2025)	Faculty of Science, University of Kelaniya

Certificates & Trainings

06/2025	AWS Academy Graduate – Data Engineering	Amazon Web Services (AWS)
06/2025	Fundamentals of Accelerated Data Science	NVIDIA
06/2023	Certificate – Responsive Web Design	freecodecamp.org
11/2023	Certificate – Machine Learning with Python	freecodecamp.org
10/2024	Certificate – JavaScript Algorithms and Data Structures (Beta)	freecodecamp.org

EXPERIENCE

03.2025 - (Current)	Research and Development Engineer (IoT) Key Responsibilities: <ul style="list-style-type: none">- Engineered and deployed web-based dashboards and control systems for real-time power inverters and other device monitoring and control, enhancing operational reliability and visibility.- Led design and development of IoT prototypes with sensors, ESP32, and communication modules.- Collaborated with cross-functional teams on system architecture, field testing, and performance optimisation to ensure successful product deployment.	AltaVision, Homagama, Sri Lanka
05.2024 - 03.2025	Voluntary Research Assistant, Department of Physics and Electronics Key Contributions: <ul style="list-style-type: none">- Developed/Optimized algorithms for real-time sensor data analysis, supporting faculty research goals.- Designed/Executed IoT projects, integrating sensors to enhance system performance and collect data.- Contributed research, resulting in multiple publications at the International Conference on Applied and Pure Sciences (ICAPS).	University of Kelaniya, Sri Lanka
07. 2024 - 03. 2025	Graduate Teaching Assistant, Department of Physics and Electronics Key Contributions: <ul style="list-style-type: none">- Assisted in courses such as embedded systems, signal processing, IoT, and computer architecture.- Mentored students through hands-on projects, offering technical support and guidance.- Developed content and lab exercises to promote active learning.	University of Kelaniya, Sri Lanka
2021 - 2023	Freelance Web Developer Key Contributions: <ul style="list-style-type: none">- Developed responsive, user-centric websites/apps with basic HTML, CSS, JS to React and Next.js.- Ensured WCAG 2.2 compliance, enhancing accessibility for diverse users.- Collaborated with clients to deliver scalable, secure, high-performance solutions.- Optimised app performance with techniques such as lazy loading, code splitting, and SEO.	Remote, Freelancing

PROJECTS

2025	Fully Customizable Ready to Deploy SCADA for Renewable Power Plants - Built offline/online SCADA platform for renewable energy plants, enabling code-free configuration. - Developed a dynamic React Flow UI for creating custom digital twin dashboards. - Integrated OPC UA for real-time data visualization and control of PLCs and industrial hardware. - Tech Stack: Next.js, TypeScript, React Flow, OPC UA, Tailwind CSS, Shadcn/UI. - GitHub: https://github.com/DeegayuA/AV-SCADA-RPP	Work Project
2025	NIC Validation & Location Finder - Developed a scalable microservices-based platform for real-time NIC validation and location finding. - Integrated Firebase Realtime DB for instant synchronisation and efficient batch processing. - Optimised for data science workflows and high-performance processing. - Tech Stack: Microservices, Firebase Realtime DB, Batch Processing, REST APIs. - GitHub: https://github.com/DeegayuA/NicValidation	Personal Project
2024	LifeSight: Accessibility Tool for Visually Impaired Users - An AI-powered tool designed to assist visually impaired individuals with daily tasks. - Includes real-time object recognition using computer vision and text-to-speech conversion. - Focused on accessibility features and personalised user experience. - GitHub: https://github.com/DeegayuA/lifesight2	Master in IT Project
2023 - 2024	GreenWing: Quad-Copter-based Intelligent Smart Irrigation System - Developed a smart irrigation system using AI and sensor technologies. - Integrated real-time weather data, machine learning algorithms, and IoT connectivity. - GitHub: https://github.com/DeegayuA/GreenWing	Final Year Electronics Research Project
2023	AI-based Assignment-Solving Android App: SnapLearn - Developed an Android app using Gemini AI to provide comprehensive assignment-solving assistance. - Utilised Kotlin, Jetpack Compose, and integrated real-time OCR using ML Kit. - GitHub: https://github.com/DeegayuA/SnapLearn	Android Project
2022 - 2023	Deep Learning Mini Projects - Implemented a series of deep learning models, including: - Sinhala Character Recognition: Trained RNN-based image classification model. - Stock Price Prediction: Built an LSTM-based model for predicting stock prices. - English to Sinhala Translation: Developed a translation model using transformers. - Car Price Prediction: Built a machine learning model using Random Forest for predicting car prices.	Learning Projects

ACHIEVEMENTS AND AWARDS

02/2024	Participation - UWU ROBOT BATTLES 2.0: Death Race (2024) Competed in UWU Robot Battles 2.0: Death Race, showcasing robotics skills and teamwork.	Uva Wellassa University, Sri Lanka
11/2023	Second Runner Up - Sky of Icarus Custom-Drone competition - 2023 2nd runner-up in the Sky of Icarus 2023 drone competition, showcasing drone skills and teamwork.	IESL Young Member Section, South Eastern University, Sri Lanka
04/2022	Best of the Class Final Year School Achieved Class Proficiency in the final year of high school, reflecting academic excellence.	Gurukula National College, Kelaniya
11/2018	Merit Certification Open Day Robotic Competition Achieved a Merit Certification at the District Level Open Day Robotic Competition.	NERDC, Sri Lanka
06/2018	Participation SLIIT GAMEFEST 2K18 Showcased involvement in SLIIT GAMEFEST 2K18, a game development competition.	SLIIT

LEADERSHIP AND TEAMWORK

2021 - 2024	Steam - VidE Main Event Coordinator, VidE - 21/22, Head of Photography 20/21, Member 19/20	Media Unit, FOS, UOK
2022 - 2023	Inventors Club Vice President 21/22, Junior Treasurer 20/21	University of Kelaniya
2022 - 2023	E-Waste Project Junior Electronics Lead 20/21, Electronics Lead 21/22	Electronic Development and Innovation Center University of Kelaniya

PUBLICATIONS

- Abstract MO-37 **Autonomous Quadcopter-based Intelligent Irrigation System for Enhancing Crop Care**
International Conference on Applied and Pure Sciences, University of Kelaniya, Sri Lanka. 2024
Vimansa W. A. H.* , **Adhikari A. M. N. D. S.**, Rathnayaka R. M. P. B., Dilshan P. K. S. I., Attanayake A. M. V. A.,
Randeniarchchi R. A. N. D., Hemal S. B. N. H., Piyumal P. L. A. K., Kumarage W. G. C.
- *Developed an autonomous quadcopter system for smart irrigation, leveraging real-time monitoring for improved water usage and crop growth.*
Drone Programming, ESP32, ML, Battery Management, Solar Power, Data Fusion, Weather API, YOLOv8, Intelligent Algorithms, web app..
- Abstract MP-14 **Wireless Pager System for Enhancing Emergency Communication in Hospital Environment**
International Conference on Applied and Pure Sciences, University of Kelaniya, Sri Lanka. 2024
Gunarathna T. G. L.* , **Adhikari A. M. N. D. S.**, Bandara K. D. Y., Gunawardana K. D. B. H., Seneviratne J. A.,
Perera M. H. M. T. S.
- *Implemented a LoRa pager system for efficient emergency communication, enhancing responsiveness in hospital settings.*
LoRa, ESP32, Raspberry Pi, 433 MHz modules, local/cloud storage.
- Abstract SO-09 **A Cost-effective and Adaptable Queue Management System to Increase Efficiency in Patient Queue Management**
International Conference on Applied and Pure Sciences, University of Kelaniya, Sri Lanka. 2024
Adhikari A. M. N. D. S., Gunarathna T. G. L., Bandara K. D. Y., Gunawardana K. D. B. H., Seneviratne J. A.,
Perera M. H. M. T. S.
- *Designed a QR-based, offline queue system to optimise patient flow at the National Institute of Infectious Diseases, Sri Lanka.*
Queue Management, IoT, Data Encryption, QR, Cloud, Accessibility, Low Battery Indicators, Load Balancing, Power Efficiency.

LANGUAGES

Sinhala - Native, **English** - Intermediate, **German** - Beginner.

INTERESTS

- **Technology:** Web Development, AI/ML, IoT, Edge Computing
- **Research:** IoT, Electronic Designs, Computer Vision, Natural Language Processing
- **Social Impact:** Accessibility Innovation, Design for All, Inclusivity in Tech, Volunteering at University
- **Creative Hobbies:** Cinematography, DIY Electronics Projects, Arduino Raspberry Pi
- **Sports:** Chess, E-Sports
- **Personal Growth:** Reading,

REFERENCE

Professor A. L. A. K. Ranaweera Professor, Department of Physics and Electronics, University of Kelaniya. arunaran@kln.ac.lk +94 (0)77 7 179 201	Dr. J. A. Seneviratne Senior Lecturer (Grade II), Department of Physics and Electronics, University of Kelaniya. jehans@kln.ac.lk +94 (0)71 822 6117
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Deeghayu Suwahas Adhikari

08/28/2025