# Madhushan Ramalingam

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## Overview

Computer Engineering graduate pursuing an MSc in Data Science and AI, with over a year of experience as a Software Engineer. Passionate about Machine Learning, Ethical AI, and data-driven solutions. Skilled in Python programming, backend development, and data engineering, gained through professional experience, lecturing, and research in explainable AI. Interested in practicing data science in real-world problems through collaborating with innovative minds.

## Education

**University of Moratuwa**　　　　　　　　　　　　　　　　　　　　　　**Jan 2025 – present**
*Master of the Science in Data Science & Artificial Intelligence — **Expected Graduation - Dec 2026***　　*Colombo, Sri Lanka*

**University of Peradeniya**　　　　　　　　　　　　　　　　　　　　　　**Dec 2018 – Dec 2023**
*Bachelor of the Science of Engineering Honours in Computer Engineering — **CGPA: 3.6***　　*Kandy, Sri Lanka*

**St. Anthony's College, Kandy**　　　　　　　　　　　　　　　　　　　　**Feb 2009 – Aug 2017**
*G.C.E A/L - Physical Science — **Z-Score: 2.4058** : **District Rank (Kandy): 3rd** & **Country Rank: 55th***　　*Kandy, Sri Lanka*

## Research work and Projects

**Explainable Predictive Pipeline for Project Risk Identification in DonorsChoose** | *Python, ML, XAI*　　**2023 - 2024**
- Developed ML pipeline for data processing, feature engineering, and training.
- Utilized Explainable AI to analyze predictions and resolve disagreements in XAI method explanations.

**Research on Alternative Labelling Strategy to Improve Supervised ML** | *Python, Pandas*　　**Accepted SLSWCS 2023**
- Applied data engineering for data collection, created labels with diverse data sources.
- Established evaluation metrics, and conducted in-depth label agreement analysis.

**DreamSave Insights API** | *Python, Flask, Pydantic, Pyspark, MongoDb, Power BI*　　**Dec 2022 - June 2023**
- Developed API features & optimized queries for data query and insights service provider backend.

**Analytical Software for Next Generation Skim Sequencing** | *Java, IntelliJ, JavaFX*　　**Feb 2022 - July 2022**
- Designed a software for Bioinformatics researchers to implement a graphical environment to process Mitochondria, Chloroplast and ITS region data with additional recommendations on data path.
- Used JavaFX to create a GUI that supports actions such as handle files, choose actions, visualize data analytics, etc.

**Smart Inventory System** | *Laravel, Vue Js, MySQL, Electron, Raspberry Pi, MQTT*　　**May 2021 - Sept 2021**
- Developed a smart inventory management system and designed interactive KIOSK app.
- Integrated a pickup locker for efficient package retrieval in the Maker Space (a Hardware Workshop in Computer Engineering Department) project.

**B2B supply chain system** | *Python, Django, MySQL, Bootstrap*　　**Sept 2020**
- Implemented a relational database to handle multiple business inventory and orders
- Developed a web application to interface customer online orders

## Experience

**Enactor Limited**　　　　　　　　　　　　　　　　　　　　　　　　**Jan 2024 – present**
*Software Engineer*　　　　　　　　　　　　　　　*Enactor Platform & Leroy Merlin Italy Dev Team*
- Improved team's development and test workflow speed by 8 times using containerization techniques - Docker
- Design and implement customized features for customer requirements - Javascript, React, POS system
- Investigate and convert of SOAP services to REST API - Java, Enactor tools, Jenkins

**Edith Cowan College, Australian College of Business and Technology, Sri Lanka**　　**Jun 2024 – Jan 2025**
*Visiting Lecturer - Python & Engineering Foundations*　　　　　*Diploma of Science (Computing/IT)*
- Conducting in-person lectures for Programming Principles in Python & Introduction to Engineering courses.

**Calcey Technologies PVT LTD**　　　　　　　　　　　　　　　　　　**Dec 2022 – June 2023**
*Intern Software Engineer - Python Backend*　　　　*Dream Start Labs Project - DreamSave Insights API*
- Worked on developing, maintaining and optimising API features with flask framework.
- Exercised professional software engineering practices.

**Department of Computer Engineering, UoP**　　　　　　　　　　　　　**Dec 2022 – present**
*Team Leader*　　　　　　　　　　　　　　　*PeraCom Seminar Organizing Committee*
- Setting up seminar standards and communicate to organize the seminar.
- Networking with academia and industry experts.

**AIESEC in Kandy**　　　　　　　　　　　　　　　　　　　　　　**February 2020 – December 2021**
*Team Leader*　　　　　　　　　　　　　　　　　　　　　　　　*Incoming Global Teacher/ Talent*
- Pitched business proposals and products for schools and companies in Sri Lanka based on monthly target.
- Signed partnerships with Sun British College, Vavuniya for Global teacher.

**Department of Computer Engineering, UoP**　　　　　　　　　　　　　　**May 2021 – present**
*Casual Instructor*　　　　　　　　　　　　*Computing, Computer Networks, Software Construction*
- Assisted lecturers to conduct labs for computer engineering courses.

**Web Consultation Team, University of Peradeniya**　　　　　　　　　**May 2020 – Aug 2021**
*Member-in-Charge for Student web pages and quality content*
- Collaborated on university web ranking improvement and provided SEO and web quality enhancement recommendations to Gulf University Sanad, Bahrain.

**DSP Kandy Marketing, Sri Lanka**　　　　　　　　　　　　　　　　　**August 2017 – Aug 2018**
*Food Service Distributor*　　　　　　*Kandy, Kurunegala, Nuwara-Eliya, Kegalle, Badulla, Matale*
- Served as a distributor for food product range, engaging with diverse customer hierarchies within the hospitality sector.

## ACHIEVEMENTS/ EXTRACURRICULAR

**AWS Certification**　　　　　　　　　　　　　　　　　　　　　　　　　　　　**2025**
*Cloud Data Pipeline Builder*　　　　　　　　　　　　　　　　　　　　　　*AWS Academy*

**Coders v9.0 Inter-University Competitive Programming Contest — ACES**　　　　**2022**
*5th place out of 100+ teams*　　　　　　　　　　　　　　　　*University of Peradeniya*
- Worked on algorithmic problem solving.

**Hacktitude 2022 Inter-University Hackathon — 99x**　　　　　　　　　　　　**2022**
*37th place out of 200 teams*　　　　　　　　　　　　　　　　*University of Peradeniya*
- Worked on a real-world project involving a web-based LMS application.
- Implemented features and fixed software bugs as a remote team collaboratively contributing to git

**Sri Lanka Student Workshop on Computer Science — University of Jaffna**　　**2023**
*Authored an extended research abstract*　　　　　　　　　　　　　　　　*SLSWCS'23*
- Submitted a research abstract on Alternative Labelling Strategy to Improve Supervised ML in DonorsChoose early prediction problem.

**Coders v10.0 Inter-University Competitive Programming Contest — ACES**　　　**2023**
*Organizing Committee Member*　　　　　　　　　　　　　　　　*University of Peradeniya*
- Took part in problem creation and moderation for competitive programming contest.

**Hackadev - National Youth Social Innovation Challenge**　　　　　　　　**2020/21**
*Participated and completed 6 week social innovation bootcamp*　　*United Nations Development Programme*
- Worked on a near real-world project involving a web-based LMS application.

**Rotaract Club**　　　　　　　　　　　　　　　　　　　　　　　　　　　　**2020**
*Member : Participated in community projects to support underprivileged students in Kandy*　　*University of Peradeniya*

**G.C.E Advanced Level**　　　　　　　　　　　　　　　　　　　　　　　　**2017**
*3rd in Kandy district & 55th in the country*　　　　　　　　*St. Anthony's College, Kandy*

*Awarded as the Best Student in the School in Physical Science Stream for the year 2017*

**All Island Social Science Competition**　　　　　　　　　　　　　　　　**2010**
*Ranked 3rd in national level*　　　　　　　　　　　　　　　*St. Anthony's College, Kandy*

## SKILLS

**Programming Languages**: Python, Java, C, JavaScript, SQL
**Libraries**: Numpy, Pandas, PySpark, Matplotlib, Pytest, TensorFlow, Scikit-learn
**Developer Tools**: VS Code, Git, IntelliJ, Eclipse, GitHub, Azure, AWS, Docker, Postman
**Technologies/Frameworks**: Flask, FastAPI, MySQL, MongoDB, Django, Express, Linux, CoLab, Enactor, React
**Web**: HTML, CSS, JavaScript, Bootstrap, REST
**Languages**: English(*Advanced*), Sinhala(*Intermediate*), Tamil(*Native*)

## REFERENCES

**Prof. Roshan G. Ragel**　　　　　　　　　　　　　　　　　　**roshanr@eng.pdn.ac.lk**
*Head of the Department — Department of Computer Engineering*　　*Faculty of Engineering, University of Peradeniya*

**Dr. Damayanthi Herath**　　　　　　　　　　　　　　**damayanthiherath@eng.pdn.ac.lk**
*Senior Lecturer, Department of Computer Engineering*　　*Faculty of Engineering, University of Peradeniya*