Chandula Adhikari

Department of Computer Engineering, University of Peradeniya, Srilanka

rajcadhikari@gmail.com | +94 711530046 | github.com/chandula00

linkedin.com/in/chandula-adhikari

Profile

Driven by a passion for problem-solving, I always welcome tough challenges that push me to find innovative solutions. I truly believe in the potential of technology to create positive change in countless aspects of our lives and am eager to contribute to this progress. My interests lie in **Machine Learning and Data Mining**, **Computer Vision**, **DevOps Engineering** and **Software and System Design**.

Education

University of Peradeniya Mar. 2021 - Present

BSc.Eng(Hons.) in Computer Engineering Current GPA: **3.85/4.0**

Dharmaraja College, Kandy Jan. 2006 - Dec. 2019

G.C.E. Advanced Level Examination - 467 from 19500+ participants nationwide Z-Score: **2.2069**

Publications

Optimized Multi-Processor System-on-Chip (MPSoC) Design for Low-Resource JPEG Encoding

K.H. Gunawardana, R.A.J.C. Adhikari, I. Nawinne

- Proposed a pipelined MPSoC architecture for efficient JPEG encoding using Altera Nios II/e cores on a Cyclone IV FPGA, integrating custom instructions, FIFO-based inter-core communication, and superscalar enhancements to maximize throughput.
- Presented at: ICAC 2024, Published in: IEEE Xplore

Experience

Intern Data Scientist | *OCTAVE, Jhon Keells Holdings* July 2024 – Dec. 2024

Contributed to production-grade data pipelines, developed and validated enterprise dashboards for **Cinnamon Hotels**, and built customer segmentation solutions that directly supported digital marketing campaigns

Technologies Used: Databricks, PySpark, Power BI, SQL (Spark SQL & T-SQL), Azure DevOps, MLflow

Administrator/ Developer | *cepdnaclk, GitHub Organization* Oct. 2023 – Present

Serve as an administrator, overseeing error resolution and repository management within the github organization of Department of Computer Engineering

Technologies Using: Jenkins, Jekyll, Fast API, GitHub

Undergraduate Teaching Assistant | *Department of Computer Engineering* Nov. 2023 – Present

Digital Design(CO221), Computer Architecture(CO224), Third Year Project(CO300), Embedded Systems(CO321), Data Structures and Algorithms(CO1030) - Assisted/ Conducted labs, quizzes, and course materials, supporting students in Arm Assembly, Verilog, and project mentoring.

Selected Projects

AI-Assisted Tool for Assessing Quality of Final Root Canal Treatment Using Dental IOPA Radiographs | *Group* | Jan. 2025 – Present

- Developing an AI framework to standardize root canal treatment (RCT) quality assessment using IOPA radiographs. Curated a dataset of 1,000 annotated radiographs and building a deep learning pipeline using CenterNet for tooth localization, U-Net for panoptic segmentation, and keypoint detection for root apex analysis, targeting improved accuracy over existing methods
- **Contribution:** Dataset curation, model development, segmentation pipeline, and interface design
- **Technologies:** Python, TensorFlow, PyTorch, CenterNet, U-Net, OpenCV

BeeZee: Smart Beehive Monitoring System | *Group* | Nov. 2023 - July 2024

- Collaborative research with the Faculty of Agriculture, University of Peradeniya to detect early signs of bee colony abscondment. Designed and built a cloud-connected data collection unit with sensors (CO_2, humidity, temperature, weight) and camera, integrated into a real-time dashboard. Successfully implemented pollen-carrying bee detection using YOLOv8 and StrongSORT for object tracking.
- **Contribution:** Designed hardware box, assembled circuits, calibrated sensors, developed front-end dashboard, and built the computer vision pipeline for bee detection and tracking.
- **Technologies:** Raspberry Pi, AWS(S3, IoT Core, Lambda), Node.js, MongoDB, YOLOv8, StrongSORT.

CricVision: Optimizing Dynamic Batting Orders in T20 Cricket | *Group* | | Mar. 2024 – Present

- Developed a data-driven system to dynamically optimize batting orders in T20 cricket using machine learning. Built a multi-output regression pipeline to predict batter performance (runs, strike rate), final team score, and Net Run Rate (NRR), enhancing decision-making after each wicket.
- **Data set :** cricsheet.org
- **Contribution:** Engineered features from Cricsheet data, web-scraped contextual data (player types, weather), implemented multiple regression models (XGBoost, Chained, Neural Networks), and deployed the best-performing model via Flask for real-time insights.
- **Technologies:** Python, Scikit-learn, XGBoost, Flask, Pandas, Matplotlib, BeautifulSoup.

VisitLog: Digital Reporting Platform for Technical Visits | *Group* | | Aug. 2023 – Nov. 2023

- Developed a cross-platform system to streamline technical service documentation, covering repairs, troubleshooting, and maintenance, with recipient approval. The solution includes a Flutter-based mobile app for technicians and a React.js dashboard for administrators to manage jobs and personnel.
- **Contribution:** Built the entire mobile app, designed and developed the admin dashboard, managed Firebase collections, and implemented an NLP-based technician allocation model using availability, expertise, and job descriptions.
- **Technologies:** React.js, Flutter, Firebase, Figma, Python.

Obstacle Robot Swarm for Swarm Robotic Project | *Group* | | Mar. 2024 – Present

- An obstacle bot is an automated robot designed for a swarm robotic arena. It can move to desired positions, avoid collisions, and be programmed as static or dynamic obstacles.
- **Contribution:** Updated firmware to support autonomous collision handling and integrated obstacle robots into the existing swarm platform for simulating dynamic obstacle scenarios.
- **Technologies:** Arduino, Python, Java

Technical Skills

Languages	Python, C/C++, Java, JavaScript/TypeScript, Verilog HDL, ARM Assembly
Developer Tools	Git/GitHub, Unix Shell, VS Code, IntelliJ PyCharm/IDEA, Jekyll, Jenkin
Frameworks	React.js, Express.js, Flutter, Spring-Boot
Libraries	NumPy, Pandas, Matplotlib, OpenCV, TensorFlow, scikit-learn, Seaborn

Achievements / Competitions

MoraXtream 8.0 | 12 hour algorithmic programming competition — Nov. 2023
Organized by the IEEE Student Branch of the University of Moratuwa
Team Name - Five4Five, National Rank - 4(Out of 450+ participants)

IEEEXtream 17.0 | 24 hour algorithmic programming competition — Nov. 2023
Team Name - Five4Five, Global Rank - 374(Out of 7091 participants)

Aces Coders v10.0 | 12 hour algorithmic programming competition — Oct. 2023
Organized by the Association of Computer Engineering Students of the University of Peradeniya
Team Name - Five4Five, National Rank - 12(Out of 350+ participants)

Aces PreCoders v10.0 | 6 hour algorithmic programming competition — Sep. 2023
Team Name - Five4Five, Rank - 2(Out of 50+ participants)

NBQSA | National ICT Awards — Aug. 2023
IntelliSwitcher: Intelligent Domestic Energy Optimizing System |
Partcipation

Selected Certificates

Machine Learning Specialization | Stanford University and DeepLearning.AI(Coursera) — Apr. 2024

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms

Python for Data Science, AI and Development | IBM and Coursera — Mar. 2023

Extra-Curricular Activities

Member of the Web Consultation team of University of Peradeniya — 2023 – Present
Senior Member of FASE (Foundation of Astronomical Studies and Exploration) — 2019 – Present
Member of Rotaract Club of University of Peradeniya — 2022 – Present
Member of the Athletics team of Dharmaraja College, Kandy — 2013 – 2017

References

Prof. Roshan G. Ragel | roshanr@eng.pdn.ac.lk
Head of Department, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka

Dr. Isuru Nawinne | isurunawinne@eng.pdn.ac.lk
Senior Lecturer, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka