Chandula Adhikari

Department of Computer Engineering, University of Peradeniya, Srilanka

☑ rajcadhikari@gmail.com | **೨** +94 711530046 | **♀** github.com/chandula00

in 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 are broad but interconnected, spanning from machine learning and computer vision to explainable AI, computer architecture, and embedded systems.

Education

University of Peradeniya

BSc.Eng(Hons.) in Computer Engineering

Dharmaraja College, Kandy

G.C.E. Advanced Level Examination - 467 from 19500+ participants nationwide

Experience

Undergraduate Teaching Assistant | Department of Computer Engineering, University of Peradeniya

CO221 Digital Design Oct. 2023 - Jan. 2024 Feb. 2024 - Present

CO224 Computer Architecture

- Supervising 3-hour weekly lab sessions covering Arm Assembly language and Verilog

Developer / Maintainer | cepdnaclk, GitHub Organization

Oct. 2023 - Present

Mar. 2021 - Present

Jan. 2006 - Dec. 2019

Z-Score: 2.2069

Current GPA: **3.85/4.0**

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

Selected Projects

BeeZee: Smart Beehive Monitoring System | Group | 🗘 | 🏶

Nov. 2023 - Present

- An innovative system to monitor bee colonies and detect early signs of abscondment. A collaborative research project with the Faculty of Agriculture, University of Peradeniya
- The initial step involves creating a cloud-connected data collection box with integrated sensors (humidity, temperature, CO2, weight) and a camera, visualized on a user-friendly dashboard.
- Currently working on gathered camera footage of hive entrance to identify pollen-carrying bees.
- Contribution:
 - * Designed the data collection box and Assembled the circuit components
 - * Calibrated all sensors except the camera
 - * Developed the front-End of the dashboard
 - * Training yolov8 model to detect bees and checking possibility of using strongSORT to track them
- Technologies: Raspberry Pi, AWS(S3, IoT Core, Lambda), Node.js, MongoDB, yolov8.

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:
 - * Firmware update of obstacle robots with collision avoidance algorithms for the swarm robotics platform.
 - * Integrating obstacle robots with the existing platform, enabling studies of dynamic obstacle scenarios.
- Technologies: Arduino, Python, Java

Mar. 2024 - Present

- CricVision can analyze data from all the T20 international matches played since 2010.
- By leveraging machine learning techniques, the system can predict the impact of a player on the match outcome and anticipate the events of the next ball, providing valuable insights for teams and fans.
- Data set : cricsheet.org
- Contribution:
 - * Web-scraped data on player types and weather conditions.
 - * Use various statistical and visual techniques to analyze the relationships between variables, identify patterns and assess the relevance of features.
- Technologies: python, BeautifulSoup, TensorFlow

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

- A robust software application that simplifies the documentation of technical service visits, covering repairs, troubleshooting, and maintenance tasks. The process concludes with verification and approval from service recipients.
- A mobile application for technicians and a Desktop dashboard for the company administrators to efficiently manage tasks and technicians.
- Contribution:
 - * Developed the entire Mobile App using Flutter
 - * Designed the UI of the admin dashboard and developed it
 - * Managed collections within Firebase
- Technologies: React.js, Flutter, Firebase, Figma

8-bit Single-cycle Processor | Group | •

Aug. 2023 - Sep. 2023

- An 8-bit single-cycle processor architecture in Verilog HDL to emulate an MIPS-inspired ISA, enabling functionality for arithmetic, logic, data transfer, and control flow operations.
- Contribution:
 - * Built a comprehensive testbench for verification, ensuring processor functionality and timing constraints.
- Technologies: Verilog-HDL, GTKWave

Technical Skills

Languages Python, C/C++, Java, JavaScript/TypeScript, Verilog HDL, ARM Assembly,

Developer Tools Git/GitHub, Unix Shell, VS Code, IntelliJ PyCharm/IDEA, Atom

Frameworks React.js, Express.js, Flutter

Libraries NumPy, Pandas, Matplotlib, OpenCV

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 - Five
4 Five, Global Rank - $374 ({\rm Out~of~7091~partici<ants})$

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

Intelli
Switcher: Intelligent Domestic Energy Optimizing System |
 $\ensuremath{\bigcap}$ Partcipation

Selected Certificates

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

Apr. 2024

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

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

<u>Dr. Isuru Nawinne</u> | isurunawinne@eng.pdn.ac.lk

Senior Lecturer, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka