THITHIRA PARANAWITHANA

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SUMMARY

I am a final-year Computer Engineering undergraduate following a specialization in Data Management, deeply passionate about software and full-stack development, machine learning, and computer vision. My academic background has provided a solid foundation in computer science fundamentals, artificial intelligence, mathematical modeling, and algorithmic optimization. I am naturally curious and motivated by the challenge of applying innovative technologies to build efficient, impactful, and real-world solutions.

EDUCATION

B.Sc. in Engineering Hons, Computer Engineering   **2021 - Present**
University of Sri Jayewardenepura, Sri Lanka.
- CGPA : 3.65

G.C.E A/L 2019 (Physical Science Stream)   **2019**
Bandaranayake College Gampaha.
- 2As & 1B │ Z score : 1.9884

G.C.E O/L 2016   **2016**
Bandaranayake College Gampaha.
- 9A Passes

SKILLS

- **Programming Languages:** C++│ Python│ Java │ C# │ JavaScript │ SQL
- **Technical Fields:** Software/Full-Stack Development │ Machine Learning │ Computer Vision │ Data Management │ Deep Learning │ Natural Language Processing │ Neural Networks
- **Databases:** MySQL │ Microsoft SQL Server │ PostgreSQL
- **Tools & Services:** Git │ Github │ PyCharm │ VS Code │ Postman │ Visual Studio │ Jupyter │ Google Colab │ Docker │ Cisco Packet Tracer │ Weka │ Android Studio │ IntelliJ
- **Libraries & Frameworks:** React.js │ Redux │ Spring Boot │ .NET │ TensorFlow │ OpenCV │ Scikit-learn │ Matplotlib

WORK EXPERIENCE

Trainee Software Engineer   **2024 May - 2024 Nov**
Innovation Quotient (Pvt) Ltd, Colombo
- Contributed to a full-stack enterprise human resource information system project, actively participating in backend API development, frontend implementation, and database operations.
- Involved in drafting BRS documentation, integrating APIs, ensuring seamless frontend-backend communication through structured testing and debugging.
- **Tech Stack :** *React.js, Redux, C# (.NET Framework), Microsoft SQL Server, Postman, Figma, Github*

PROJECTS

SafeLABS - Laboratory Management System 🔗
- Designed and developed a secure laboratory management solution for a chemical lab, integrating face recognition-based user authentication and object detection for safety compliance. The system enables real-time authentication control with automated attendance tracking, manages personnel and resource records, provides lab occupancy updates, and announcements via a responsive web application.
- **Tech Stack :** *React.js, Redux, C# (.NET Framework), Microsoft SQL Server, Postman, Python, OpenCV, YOLO, TensorFlow*

NextStop - Bus Ticket Reservation System 🔗
- Developed a distributed microservices-based bus ticket reservation system that streamlined seat booking, user authentication, bus, route, schedule and user management, and payment processing. Implemented loosely coupled services with dedicated databases. Designed a responsive web application for seamless user experience.
- **Tech Stack :** *Spring Boot, Netflix Eureka Server, Spring Cloud Gateway, React.js, RESTful APIs, PostgreSQL, Postman*

MotionMetrics - Sports Biomechanics System (Ongoing) 🔗

- This is my final year project. A sports biomechanics system which captures and reconstructs athletic movements in 3D using computer vision technologies with synchronized, calibrated video feeds. The system leverages a marker-based joint tracking for analyzing dynamic poses such as jumps and gaze direction, enabling precise motion analysis.
- **Tech Stack :** *Python, OpenCV, SpinView, PySpin, TensorFlow, MATLAB*

Neural Network Based Hyperparameter Optimization for Random Forest Models 🔗

- Individual research project, where I proposed a meta-learning approach using a neural network to predict the most suitable hyperparameter combination for Random Forest classifiers based on dataset characteristics.
- **Tech Stack :** *Python, TensorFlow, NumPy, Pandas, Scikit-learn, Matplotlib*

CuddleCam - Baby Monitoring System 🔗

- Developed a portable baby monitoring system using computer vision and deep learning to detect infant emotions and poses, enabling identification of potentially risky behaviors. Integrated real-time alerts and video streaming through a mobile application to assist with infant supervision.
- **Tech Stack :** *Python, OpenCV, TensorFlow, MediaPipe, Flask, Flutter*

MazeRunners - Advanced Maze Generation and Path Solver 🔗

- Developed an advanced maze generation and solving application implementing multiple pathfinding algorithms (BFS, DFS, A*, Dijkstra's) with real-time visualization. System integrates computer vision techniques including Canny edge detection, adaptive thresholding, and Hough transform to extract maze structures from images.
- **Tech Stack :** *Python, Pathfinding Algorithms (BFS, DFS, A*, Dijkstra), OpenCV, NumPy, Tkinter, Hough transform, Canny edge detection, Gaussian blur*

inPATH - Learning Management System 🔗

- A student–lecturer portal system with features like attendance management, personalized dashboards, automated exam seating, and recommendation of optimal academic fields based on student performance at the examination.
- **Tech Stack :** *Python, Gradient Boosting Classifier, Pandas, NumPy, Scikit-learn, HTML, CSS, JavaScript*

Library Management System 🔗

- A console-based Library Management System that demonstrates solid Object-Oriented Programming principles, featuring member enrollment, book inventory management, and a borrowing/return tracking mechanism.
- **Tech Stack :** *C++*

Bowling Game 🔗

- A console-based, fully functional bowling game which uses basic principles of C++ programming language.
- **Tech Stack :** *C++*

HIGHLIGHTS

- **Dean's List :** Semester 1
- **Coding Competitions Participated :** CodeSquad 3.0, MoraExtreme
- **Interests :** Software/Full-stack development, Machine Learning, Computer Vision, Data Management, Cricket, Football, Carrom, Photo Editing
- **Extra-Curricular :** Organizing committee member for ENIGMA Engineering Exhibition, School Carrom Team Player, Volunteer – Beach Cleanups & Blood Donation Camps (Sahasra Society)

CERTIFICATIONS

- Machine Learning Specialization - DeepLearning.AI & Stanford University
- Problem Solving- Basic (HackerRank)
- Programming in Python (open.uom.lk)
- Introduction to Machine Learning (Kaggle)
- Tensorflow for deep learning bootcamp - Andrei Neagoie, Daniel (Following)

REFERENCES

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