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 (Ongoing)
- A distributed microservices-based bus ticket reservation system that streamlines seat booking, user authentication, bus and route management, and payment handling. The system features loosely coupled services with dedicated databases, and a responsive web application.
- **Tech Stack :** *Spring Boot, Netflix Eureka Server, Spring Cloud Gateway, React.js, PostgreSQL, MongoDB, Postman*

MotionMetrics - Sports Biomechanics System (Ongoing)

- A sports biomechanics system which captures and reconstructs athletic movements in 3D using computer vision 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 which proposes 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

- A portable baby monitoring system developed utilizing computer vision and deep learning for emotion and pose detection, capable of identifying risky behaviors of the baby. CuddleCam integrates real-time alerts and video streaming via a mobile application.
- **Tech Stack :** *Python, OpenCV, TensorFlow, MediaPipe, Flask, Flutter*

MazeRunners - Advanced Maze Generation and Path Solver

- 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, OpenCV, NumPy, Tkinter*

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

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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