GAYASHAN DEWANARAYANA (GD)

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PROFESSIONAL SUMMARY

Master's graduate in Artificial Intelligence from La Trobe University with hands-on experience designing intelligent systems and transforming data into impactful applications. Contributed to cutting-edge projects at Blackbox Innovation, including a serverless GPT-powered workout planner and a pose analysis platform integrating computer vision with dynamic language-based feedback. Alongside my AI expertise, I possess a strong foundation in full-stack and backend development, allowing me to build and deploy end-to-end AI-driven software solutions. I thrive at the intersection of machine learning and software engineering, with a deep commitment to creating practical, user-focused innovations that solve real-world problems.

EDUCATION

La Trobe University – Australia
MSc – Artificial Intelligence (Coursework completed – Graduation expected December 2025)

University of Colombo - Sri Lanka
BSc (Hons) in Electronics and Information Technology (2018-2023)
Second Class (upper division)

PROFESSIONAL QUALIFICATIONS

AWS Academy Cloud Foundations
Azure Fundamentals (ongoing)

EXPERIENCE

Artificial Intelligence Engineer | Blackbox Innovation
Melbourne, Victoria, Australia
(March 2025 – June 2025)

• Contributed to the development of an AI-powered mobile workout planner (pre-release).

◦ Designed and deployed a serverless backend using Firebase Cloud Functions to generate personalized workout plans via OpenAI Assistant API based on user goals, equipment, and targeted muscle groups.

◦ Identified and resolved LLM hallucination issues by restricting the AI to output only exercise IDs and retrieving all static metadata (e.g., name, steps, image URLs) from Firestore based on those IDs.

◦ Developed a Python-based enrichment pipeline to combine GPT-generated dynamic fields (order, reps, duration, weight) with trusted database metadata.

◦ Integrated Firestore to store validated workout documents with auto-generated document IDs, server timestamps, and user references.

◦ Technologies and Tools – Firebase Functions, Python, OpenAI API, Firestore, Postman, GitHub

• Enhanced a computer vision-based swimming pose analysis system that combines pose landmark tracking with GPT-based feedback generation to evaluate swimmer technique.

◦ Used MediaPipe's heavy model to extract pose landmarks (shoulders, elbows, hips, and wrists) and compute key swim ming metrics like stroke count, arm symmetry, glide duration, and hip rotation timing through frame-by-frame joint tracking.

◦ Structured the extracted pose metrics into a semantic summary and fed them into a custom prompt pipeline for GPT, enabling natural language feedback tailored to each swimmer's performance.

◦ Curated a comprehensive domain knowledge base to contextualize GPT outputs using technical swimming technique guidelines.

◦ Technologies and Tools – Python, OpenCV, MediaPipe, Matplotlib, NumPy, OpenAI API, JSON

Software Engineer | Mickiesoft
Colombo, Sri Lanka
(May 2023 – Nov 2023)

• Contributed to the development of an organizational management tool. This tool is a cross platform mobile application designed to oversee various departments within an organization. (Mainly Human Resources)

◦ UI design: work with the UX designer to implement wireframe designs to web pages (HTML, CSS)
◦ Implemented the front-end functionalities like input validations.
  ▪ Login integration using React Redux
  ▪ REST API integration
  ▪ Data retrieval using RTK Query
◦ Technologies and Tools - React Native, Swagger, Postman, TypeScript

• Contributed to the development of an ERP system for a construction company based in Belgium. This web application was designed using .Net core and React.

◦ UI design: work with the UX designer to implement wireframe designs to web pages (HTML, CSS and Fluent UI)
◦ Redux tool kit was used for the State handling and API Integration.
◦ Technologies and Tools - React, Redux tool kit

Intern Software Engineer | Mickiesoft
Colombo, Sri Lanka
(Nov 2022 – May 2023)

• Assisted in the development of a web application for Wayamba University of Sri Lanka. The application used to manage the internship programme of the university. Navigation bar, Header and footer were developed using Laravel (PHP) and dynamic webpages were designed using react .

◦ GIT Link: https://github.com/gayyaalpha/IMS
◦ UI design: work with the UX designer to implement wireframe designs to web pages (bootstrap JS, React, CSS)
◦ Implemented logins with unique features to each stakeholder using Laravel.
◦ Developed data retrieval and storage APIs using Laravel 7.
◦ Integrated REST APIs using React and Redux.
◦ Debugged the frontend using Chrome DevTools.
◦ Implemented the Model-View-Controller (MVC) architecture and added migrations.
◦ Technologies and Tools – React (JS), Laravel 7(PHP), Bootstrap, MS SQL

• Involved in backend bug fixing for an ERP system called "Goddeeris". Goddeeris is a web application uses to manage construction projects and their staff. The app has Inventory management and financial management capabilities.

◦ Debugged .NET Core API issues by analysing Postman responses.
◦ Designed and optimized database queries using DB Forge Studio's GUI.
◦ Managed backend data structures by implementing .NET migrations.
◦ Technologies and Tools – .NET Core, Postman, Swagger

OTHER PROJECTS

UNIVERSITY PROJECTS

Object Detection and Tracking with Mask R-CNN. (During postgraduate studies)

• Under the subject CSE5CV (Computer vision) we were task to make a short video using our mobile phones and which includes five coco objects from coco dataset. Our objective was to use a pre trained Mask R-CNN model to track the objects in the video.

- ◦ Implemented IoU-based tracking to ensure consistent object tracking across all frames.
- ◦ Enhanced detection accuracy by defining unique confidence thresholds for each object class.
- ◦ Utilized IoU thresholds to measure overlap between bounding boxes in consecutive frames.
- ◦ Assignment outcome: 32/40
- ◦ Technologies and Tools - Python, OpenCV, Mask R-CNN

E-Tube (During postgraduate studies)

• As part of the Mobile Application Development course, I was tasked with developing a mobile application that could be useful during COVID. I chose to create a platform for conducting online classes for high school students because many faced disruptions in their education due to school closures. My goal was to provide an accessible and user-friendly solution to help students continue learning remotely.

- ◦ GIT link - https://github.com/gayyaalpha/E-tube-attempt-
- ◦ Zoom was embedded into the application for video conferencing
- ◦ Payment gateway was embedded into the app using Payhere.
- ◦ Firebase was used as the database to store student information.
- ◦ I used login module to assign access levels to different stakeholders.
  Ex: teacher and student
- ◦ Technologies and Tools -Android Studio (Java), Firebase, Payhere

PERSONAL PROJECTS

Real Tuk Racing

• Developed a racing game centered around the iconic three-wheel taxis of Sri Lanka, featuring multiple missions and an engaging storyline. Players can modify their vehicles with various gadgets and upgrades Integrated a points system, where points earned in the game can be used as currency for vehicle customization.

- ◦ App link - https://play.google.com/store/search?q=real+tuk+racing&c=apps&hl=en
- ◦ Cross platform mobile racing game with 50k+ downloads in play store.
- ◦ Contribute the game flow of the mission and the story of the game.
- ◦ Contributed to the development of the terrain and vehicle parts using blender.
- ◦ Technologies used - Unity gaming engine, C#, Blender

KEY SKILLS

AI Skills: Python | R | Scala | Mediapipe | Oracle | MS SQL | Firebase | OpenCV | Pandas | NumPy | CNN | Matplotlib | PyTorch | TensorFlow | OpenAI

Development Skills: Laravel (PHP) | PHPStrome | .NET (C#) | Rider | React.js (JS, TS) | VS code | Java | C

Soft Skills: Team Collaboration | Critical Thinking | Adaptability | Communication

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REFERENCES

Available upon request.