Chamod Shyamal Madusan

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EDUCATION

- **University of Moratuwa** — Sri Lanka
  B.Sc. (Hons) Electronic and Telecommunication Engineering — June 2021 - Present
  - **Cumulative GPA: 3.72/4.00**

- **Richmond College , Galle** — Sri Lanka
  G.C.E Advanced Level Examination 2019 (Physical Science Stream) — Jan. 2006 - Dec. 2019
  - Ranked: 50th in the country and District 5th with a z-score of 2.7754

- **Trainee Full Stack Developer - University of Moratuwa (Open Learning Platform)**
  - Python for Beginners ⌂
  - Python Programming ⌂
  - Server-side Web Programming ⌂
  - Web Design for Beginners ⌂
  - Front-End Web Development ⌂
  - Professional Practice in Software Development ⌂

- **Other Courses**
  - Deep Learning Specialization - *DeepLearning.AI (Coursera)*
  - Game Design and Development with Unity 2020 Specialization - *Michigan State University (Coursera)*
  - Generative AI with Large Language Models - *DeepLearning.AI , Amazon Web Services (Coursera)*

PROJECTS

- **Enfluent - language learning platform** ⌂ — Ongoing
  Developed a personalized language learning platform.
  - Focuses on learning reading, writing, and speaking based on IELTS criteria.
  - Provides individual grading for each criterion to evaluate progress.
  - Created a 3D chatbot avatar provides real-time feedback on speech, including grammar, pronunciation, and confidence levels, enhancing learner engagement.
  - Incorporated data from embedded systems (e.g., heart rate and emotional analysis) to adapt lesson plans and provide tailored feedback for individual learners.
  - Tools & technologies used: *React , Deepface , LAMA , OpenAI , Python , ThreeJS , Blender , JavaScript , Rhubarb*

- **E-commerce Application Website Development** ⌂ — 2024
  Developed a comprehensive e-commerce website tailored for selling headphones, speakers, and smartwatches.
  - Integrated payment processing, a user-friendly shopping cart, and efficient item management for seamless e-commerce functionality.
  - Built with Next.js and React for a responsive, visually engaging, and intuitive shopping experience, powered by Sanity for backend operations.
  - Tools & technologies used: *React , NextJS , Sanity , JavaScript , CSS , Stripe*

- **Space Ship Simulation** in — Ongoing
  Create a Space Ship Simulation with realistic 3D graphics using the Unreal game engine.
  - Developing advanced physics systems to simulate hyperspace dives, gravitational pulls, and navigation around celestial objects.
  - Creating immersive scenes that highlight the thrill of space exploration, featuring black holes and massive stars.
  - Combining real-world physics with engaging gameplay for a thrilling and educational space adventure.
  - Tools & technologies used: *Unreal Engine 5.4 , Blueprint , C++ , Blender*

- **Cyborg Fury - Third Person Shooting game Design & Develop (Individual)** in — Ongoing
  Create an RPG shooting game with realistic 3D graphics using the Unreal game engine.
  - Cyborg Fury offers dynamic mechanics like FPS mode switching, weapon pickups, dodging, tactical ladder climbing, and a strategic cover system for engaging combat.
  - Includes intelligent enemy AI and customizable graphics for enhanced game-play
  - Built with Unreal Engine 5.4 and Blueprints, the game offers immersive realistic graphics.

- **Open world Game Implementation Using Unity with Questionnaire Web Application** ⌂ — 2024
  Start an exciting 3D RPG adventure in a open world , made for Unity WebGL platform.
  - Beautifully optimized worlds and an engaging narrative.
  - Includes an open-world adventure with realistic mechanics and quests like shooting, hunting, farming and stealing.
  - Includes advanced weapons, vehicle control, a shop system, dynamic weather, and realistic gameplay.
  - Develop a questionnaire website focused on promoting energy-saving habits and sustainable practices.
  - Tools & technologies used: *Unity Engine , Character Creator 4 , Iclone 8 , C# , Java , JavaScript , React*

- **Third Person Military game Design & Develop (Individual)** ⌂ — 2024
  Develop an immersive RPG shooting game with realistic 3D graphics using Unity and C.
  - Craft lifelike enemy AI to challenge players with dynamic tactics and reactions, mirroring real combat scenarios.
  - Immerse players in intense combat with customizable gear.
  - Enhance immersion with captivating cutscenes and animations.

- **Brain Haemorrhage Detection** ⌂ — 2023
  Developed a brain hemorrhage detection and localization system to identify intracranial hemorrhages.
  - Three models were analyzed, their performance metrics were defined, and ResNet150 was chosen for its effectiveness in identifying intracranial hemorrhages.

- Six windowing methods were utilized, and the sigmoid BSB method was identified as the most effective.
- Preprocessing data from a CSV file, comparing with the SOP Instance UID, and then opening the corresponding DICOM image and labels..
- Tools & technologies used: *Python , Tensorflow , Numpy , Pandas*

- **Flower Exchange LSEG Project**⊙ 2023

Created a Flower Exchange System enabling traders to trade flowers using C++
- enabling traders to seamlessly buy and sell flowers, with a focus on order processing, input validation, and real-time execution reporting.

- **Mood Lamp (Individual)**⊙ 2023

Created a customizable mood lamp with remote control capabilities.
- Features include remote color and pattern control via a mobile app, real-time brightness adjustments, and scheduled mood changes.
- Tools & technologies used: *Arduino/C++, Altium, Solidworks*

- **Design of Local Area Network Simulation**⊙ 2023

Implemented a backbone network for the university and the ENTC department.
- Configured the backbone network routing with OSPF and simulated it using Packet Tracer.

- **Virtual and physical robot implementation**⊙

Designed two distinct implementations, both physical and virtual, to perform specific tasks 2022 - 2023
- wall following, line maze solving, finding the shortest return path, escaping from the blind box , dotted line following, segmented wall following, chess board activity, complete the broken bridge by placing boxes
- Tools & technologies used: *Webots, SolidWorks, Arduino/C++*

- **Linear Power Supply**⊙ 2022 - 2023

Designed a 0-15V adjustable linear power supply with minimal ripple and overcurrent protection.
- Tools & technologies used: *Altium, SolidWorks, Multisim*

- **Medication Box Simulation (Individual)** ⊙ 2023

Designed a virtual medication box with a user-friendly interface for managing schedules and reminders.
- Tools & technologies used: *Arduino/C++, Wokwi , Node-Red*

- **Water Level Detector**⊙ 2022

Developed a Bluetooth-enabled device for real-time water level monitoring and alerts, with a mobile app displaying detailed statistics.
- Tools & technologies used: *Altium, SolidWorks, Arduino/C++*

INTERNSHIP EXPERIENCE

- **MAS Holdings Bodyline Pvt Ltd - Machine Learning Engineer (Autonomation Team)**
- Developed a computer vision model for error detection in labels , utilizing Raspberry Pi for model deployment, and created a local app to run the error detection model on Raspberry Pi.
- Develop Business apps on the Microsoft Power Apps platform with C# integration.
- Other Skills: SolidWorks, Project Management, PLC(novice), *.NET*(novice) , Electronics

TECHNICAL SKILLS AND INTERESTS

Programming Languages:Python(intermediate), C++(basic), C# (intermediate with Unity), JavaScript(basic), MATLAB(basic) , Blueprint(Unreal Engine)

Developer Tools: HTML, CSS, Numpy, Pytorch, Tensorflow, React, ThreeJS, Microsoft Power Apps

EDA, Simulation and CAD Tools: Unity , Altium, Proteus, SolidWorks, Webots , Unreal Engine 5

Languages: : Sinhala (native) , English

Areas of Interest: Software Engineering, AR / VR , Machine learning, data science, Video Game Development

VOLUNTEERING AND LEADERSHIP EXPERIENCE

- **Committee Member ,** Electronic Club of University of Moratuwa 2022 - Present
- **Department Facilitator ,** EXMO23 The Flagship Technological Exhibition of University of Moratuwa 2023
- **Events Pillar ,** ACIES seson 02 Gaming Competition organized by Mora Esports Club 2022
- **Committee Member ,** Esports Club of University of Moratuwa 2021 - Present
- **Basket Ball Vice Captain ,** Richmond College Galle 2017-2018

ACADEMIC ACHIEVEMENTS

–**Mahapola Higher Education (Merit) Scholarship** 2020
  For outstanding performance in GCE A/L Examination.

–**The Best All-Round Student Enter the University.** 2020
  Richmond College, Galle, Sri Lanka

–**Physics Olympiad - Silver Medal** 2019
  Institute of Physics, Sri Lanka

REFERENCES

Dr. Ranga Rodrigo
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