

# SUPUN GAMLATH

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## PROFILE

I am a motivated Computer Science undergraduate specializing in Integrated Computer Engineering, focusing on robotics, embedded systems and IoT. I'm always excited to work on real-world projects and enhance my skills.

## PROJECTS

[MORE PROJECTS ON PORTFOLIO](#) 

### [ASIA-PACIFIC ROBOCON 2023](#) , June 2023 – August 2022

Leader of Team Mora, the robotics team from the University of Moratuwa who represented Sri Lanka at Asia Pacific RoboCon 2023 held Phnom Penh, Cambodia.

Coordinated team, managed stakeholder proposals, and oversaw financial aspects as team leader.

Responsible for designing and programming the “Rabbit Robot”, featuring dual ESP32 microcontrollers interfaced via UART for wheel and arm control, alongside a Raspberry Pi 3 with Kinect Camera for image recognition tasks.

### [MAZE SOLVING ROBOT](#) , December 2021 – January 2022

Simulated a maze solving robot using Python on a GCTronic E-Puck robot in a Webots environment.

Developed wall detection algorithm for noisy sensors using scikit-learn as the machine learning library.

Used OpenCV for object detection and image segmentation to identify rewards and walls in maze.

Implemented A\* search, Flood Fill algorithm and PID control and sensor fusion algorithms.

Awarded 1<sup>st</sup> Place Winner at IESL RoboGames 2022 for this robot.

### [3D ARENA MAPPING ROBOT](#), September 2023 - Ongoing

Constructing an autonomous robot for 3D arena mapping using a Kobuki Robot base, powered by a Raspberry Pi 3 processor and a Kinect Camera for SLAM.

Utilizing ROS2 Foxy, incorporating packages such as nav2, kobuki\_ros\_interfaces, and kinect\_ros2.

Planning to implement a Gaussian Splatting technique for precise 3D model development.

## SKILLS

- Robot Development (ROS2, PlatformIO)
- Programming Skills (C++11, Java, Python3)
- Robot Simulation (Webots, Gazebo)
- App Development (React Native)
- Machine Learning (scikit-learn, XGBoost)
- Image Processing (OpenCV, Pillow)
- PCB Design (Eagle, Fusion 360)
- Web Design (React, HTML, CSS, JavaScript)

## EXPERIENCE

2021 – 2022

**RESEARCH ASSISTANT**, INTELLISENSE LAB | UNIVERSITY OF MORATUWA

Assisted an industry collaborated project to build Xavier, an autonomous rover that maps an area in 3D. Worked on the mapping algorithm with ROS OctoMap.

2016 – 2021

**FREELANCER**, WEB DESIGN | APP DEVELOPMENT | AUTOMATION

Worked with international clients from Germany, Denmark, and Austria on various freelance projects including websites, mobile apps, and automation projects.

## EDUCATION

UNIVERSITY OF MORATUWA

**B.Sc. in Engineering (Undergraduate)**, SGPA – 3.81 (OUT OF 4.00)

Department of Computer Science Engineering  
Specializing in Integrated Computer Science

THE OPEN UNIVERSITY OF SRI LANKA

**Certificate in Computer Aided Drafting and Modelling**

COURSERA COURSES

**Basic Robotic Behaviors and Odometry**, UNIVERSITY OF COLORADO BOULDER

**Neural Networks and Deep Learning**, DEEPLARNING.AI

## AWARDS AND HONOURS

**Dean's List**, UNIVERSITY OF MORATUWA | 2023

Faculty of Engineering | Semesters 1, 2 & 3

**Runners Up (Team)**, CHALLENGERX | 2023

AI / ML Incubator program for 6 months organized by IFS and Hatch

**First Place**, IESL ROBOGAMES | 2022

Robotics Competition organized by Institution of Engineers Sri Lanka and University of Moratuwa

**First Place (Team)**, SLIIT BASHAWAY | 2022

Coding Competition organized by SLIIT Free and Open Source Community

**All Island Finalist (Team)**, IEEE INNOVATION NATION | 2021

Startup Accelerator organized by Institute of Electrical and Electronics Engineers, ICTA and LSEG

## REFERENCES

**Prof. Chandana Gamage**

Senior Lecturer

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