**Kaung Min Khant**

Myanmar Citizen | kaungmin3112002@gmail.com| +44 7539496429|

LinkedIn: <https://www.linkedin.com/in/kaungminkhant/>

GitHub: <https://github.com/Kaung31>

**PROFILE**

**Robotics Engineer (BEng, First Class Honours)** with hands-on experience in **ROS**, **STM32**, and **embedded systems** for real-time robotic applications. Skilled in **robot perception**, **autonomous navigation**, and **control systems** using **Python**, **C++**, and **MATLAB**. Delivered practical projects including **driver fatigue detection**, **vehicle recognition with YOLOv8**, and robotic arm automation. Passionate about solving real-world problems through intelligent robotics and computer vision.

**EDUCATION**

**University of West of England Bristol, United Kingdom**

*BEng (Hons) Robotics Engineering, First Class Honors September 2022 - August2025*

* **Key Topics:** Robotics, ROS, Embedded Systems, Robot Control, Computer Vision, Mechatronics
* **Tools & Platforms:** Python, C++, MATLAB, STM32, Arduino, ROS, Sensor Fusion
* **Academic Highlights:**
  + **Developed** deep learning models for visual detection and recognition tasks.
  + **Integrated** **ROS** with machine learning techniques for robot perception and control.
  + **Implemented** real-time embedded solutions in robotics applications.

**EXPERIENCE**

**Fatigue Detection Using Facial Landmarks –Python, UWE Bristol, United Kingdom**

*Undergraduate Research Thesis December 2024 – April 2025*

* **Developed** a real-time driver fatigue detection system using **MediaPipe Face Mesh, EAR, MAR**, and **blink/yawn detection**.
* **Implemented adaptive thresholding** based on **head pose** and **lighting conditions**, achieving **98% accuracy** without glasses.

**Micro-mouse Robotics Challenge, UWE Bristol, United Kingdom**

*Team Member February 2025 – April 2025*

* **Designed** and **implemented** a maze-solving algorithm using **DFS-based exploration** and **Flood Fill** for shortest path computation on STM32.
* **Focused** on algorithm development within the team, ensuring **adaptability** to varying maze layouts and **optimizing speed.**

**PROJECTS**

**Localization & Mapping with ROS and MATLAB Bristol, United Kingdom**

*Course Project February 2025 – May 2025*

* **Developed** a **MATLAB-based control system** for **TurtleBot3 navigation** in **ROS/Gazebo**, applying **velocity motion models** and **occupancy grid mapping.**
* **Implemented EKF** and **Particle Filter** algorithms to fuse **LIDAR** and **odometry** data for accurate localization.
* **Utilized callback functions** and **real-time logging** for robust autonomous performance.

**AL5D Robotic Arm for Test Tube Handling Bristol, United Kingdom**

*Team Lead September 2024 – January 2025*

* **Designed** a robotic arm control system using **Arduino**, **joysticks**, **button pins**, and **LEDs** for test tube handling.
* **Programmed** precise **pick-and-place operations**, achieving **reliable and repeatable** test tube transfers between racks.

**NAO Robot for a Bubble Tea Shop Bristol, United Kingdom**

*Individual Project September 2024 – January 2025*

* **Programmed** a NAO robot using **Choregraphe**, **Python**, and a **socket server** to handle customer orders with **speech recognition** and **gesture-based dialogue**.
* **Simulated** real-world service by **automating payment prompts** and creating an engaging, interactive experience.

**ArUco Pattern Classification & Detection Bristol, United Kingdom**

*Course Project September 2024 – January 2025*

* **Trained** deep learning models (**AlexNet**, **ResNet-50**, **ResNet-101**, **YOLOv2**) for ArUco pattern recognition under distortion.
* **Achieved** 98% classification and 90% detection accuracy, ensuring **robust real-world pattern recognition**.

**Vehicle Detection with YOLOv8** (**Demo:** [Vehicle Detection App](https://huggingface.co/spaces/Havertz31/vehicle-detection-yolov8)**) Bristol, United Kingdom**

*Individual Project July 2025 – August 2025*

* Trained a **custom YOLOv8 object detection model** on aerial drone footage (VisDrone dataset) to detect **cars**, **buses**, and **trucks**.
* Built a real-time **video-processing pipeline** using **Python**, **OpenCV**, and **Ultralytics** for **frame-by-frame inference** and **bounding box annotation**.
* Deployed the model using **Streamlit** on **Hugging Face Spaces**, enabling interactive video upload and downloadable detection results.
* Conducted thorough **model evaluation**, addressed **class mislabelling**, and iteratively **retrained** to improve detection **accuracy and robustness**.

**TECHNICAL SKILLS**

**Programming Languages**: Python, C++, MATLAB

**Embedded Systems**: STM32, Arduino, Microcontrollers

**Robotics & Simulation**: ROS, Gazebo, OpenCV

**Control & Perception**: Motion Planning, LIDAR, Sensor Fusion (EKF, Particle Filter), PID Control

**Tools & Platforms**: Git, Choregraphe, Serial Communication, Real-Time Logging

**Languages**: English (Fluent), Chinese (Fluent)