

KUSAL NIRMALA

Machine Learning Engineer — AI Undergraduate & Applied Researcher

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[Add LinkedIn URL] | [Add GitHub URL] | [Add portfolio URL once deployed]

PROFILE

BSc (Hons) Artificial Intelligence undergraduate with hands-on experience spanning computer vision, embedded systems, and full-stack development. Led a hardware team to 2nd Runner-up at a national IoT tournament and is currently developing an original computer-vision research project applying pose estimation to martial arts technique analysis. Shotokan Karate black belt. Seeking Machine Learning Engineer roles, with a long-term interest in research and academia.

EDUCATION

BSc (Hons) Artificial Intelligence In Progress
University of Plymouth (UK), delivered at NSBM Green University | [Add expected graduation date]

BSc (Hons) Software Engineering (Top-Up) In Progress · Concurrent
Birmingham City University, UK

– Coursework: Java Enterprise Application Development, PHP, React Native, Node.js, MongoDB

Higher Diploma in Software Engineering [Add dates]
[Add institution name]

Professional Diploma in Software Engineering [Add dates]
[Add institution name]

RESEARCH

KaratePose_AI — Independent Research Project In Progress
– Undergraduate research proposal applying pose estimation (MediaPipe, YOLOv8-Pose) to karate technique, benchmarking accuracy degradation under rigid-garment occlusion and high-velocity motion.
– Designing an event-triggered Extended Kalman Filter that corrects joint tracking using a de Leva biomechanical segment model and momentum-based projection, evaluated against a linear-interpolation baseline.
– Structured as two manuscripts: a benchmarking study and an algorithmic methodology paper. Full proposal available on request.

LEADERSHIP & PROJECTS

Team Lead — Team Hades SLIOT Tournament, University of Moratuwa
– Led a student team to 2nd Runner-up (University Category) designing and building a LoRa-based tracking system for fishery boats operating beyond cellular network coverage.
– Designed and assembled a custom PCB carrying the LoRa transmitter link, taking the project from concept through to a working, competition-ready prototype.

TECHNICAL SKILLS

Languages & Core: Python, SQL, Git, Data Structures
Machine Learning & AI: Machine Learning, Deep Learning, Computer Vision, Pose Estimation
Applied Engineering: Java (Enterprise), PHP, React Native, Node.js, MongoDB, PCB Design, LoRa/IoT

ADDITIONAL

Black Belt, Shotokan Karate — over a decade of training and competition discipline.