Ethan Dsouza

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TECHNICAL SKILLS

Aerial Robotics; Artificial Intelligence; C++; C#; CI/CD; Computer Vision; Control Theory; Convex Optimization; Data Integration; Design Patterns; Docker; Dynamical Systems; Embedded Systems; Gazebo; Git; Linux; MATLAB; Machine Learning; .NET; Path Planning; Python; PyTorch; ROS; ROS2; SLAM; Sensor Fusion. Technical portfolio

EDUCATION

Sep 2024-Sep 2025 - *MSc Robotics & AI* - **University College London (UCL)**, London, UK - Distinction (4.0 Equivalent)
Sep 2020-May 2024 - *BSc Artificial Intelligence* - **Anglia Ruskin University**, Cambridge, UK - Distinction (4.0 Equivalent)

EXPERIENCE

Aerial Research Intern - *University College London (Here East)* - May 2025–Sep 2025
• Developed and **integrated SLAM on an X500 drone** using an onboard Jetson Nano.
• **Implemented two SLAM frameworks** to run autonomously for localization and mapping.
• Documented software and hardware integration, including 3D modeling of components.

Full-stack Software Developer - *Blackdot Solutions* - Sep 2022–Feb 2025
• **Developed and maintained core functionality** in data integration systems and web applications.
• **Deployed automated testing** with GitHub Actions, executing **~200,000+ tests per day in a CI pipeline**.
• Held sprint reviews to stakeholders and colleagues.
• **Implemented 5 API integrations** for clients such as HSBC, Deutsche Bank, and the UK Government.
• **Designed and implemented RESTful APIs** for registration, login, and profile management.

Mobile App Developer - *Openspace* - Jan 2022–Jun 2022
• Developed and **launched a geo-location based mobile game** to encourage exploration of Cambridge.
• Used **Google Cloud Platform (GCP)** and Google Maps APIs.
• Supported 100+ concurrent users and **handled 5,000+ API calls** in a single day.

Educational Tutor - *Code Ninjas* - Sep 2019–Apr 2020
• Taught loops, conditionals, and variables to students aged 7–14
• Updated parents informed about progress and focus areas.

PROJECTS

Hybrid Aerial Surface Vehicle – Ongoing since Oct 2025
• Designed, built, and 3D-printed a **drone capable of both quadrotor flight and marine operation**, developed entirely from scratch.
• The **project was accepted into the 2025 Founders Inc. Blueprint Program**, with a one-on-one call with Hubert Thieblot.
Portfolio: HASV Project

Autonomous Underwater Drone Pollution Detection - Sep 2025
• Built a robotic system using the BlueROV2 UUV for **autonomous river pollution monitoring**.
• **Implemented an MPC controller for autonomous trajectory** following in river simulations.
• **Developed a PDE-based pollutant flow simulator and an inverse physics-informed neural network** for parameter inference and concentration recovery.
Portfolio: UUV Project

Laplacian-Based Drone Swarm - Apr 2025
• Developed a **decentralized drone swarm control system** using a Laplacian-based coordination method.
• Implemented on Crazyflie drones and deployed on 3 drones to navigate a field of 7 poles.
Portfolio: Drone Swarm Project

1st Place Google & Neuphonic AI Hackathon - Dec 2024
• Built a **low-latency object detection system** for visually impaired users in under four hours using YOLO, an Arducam, and a real-time text-to-speech API.

CERTIFICATIONS

Stanford Online: Convex Optimization
MATLAB Online: Machine Learning; Deep Learning; Signal Processing; Image Processing.
Jovian.ai: Data Analysis; Machine Learning.