

Ali Youssef

✉ ali.youssef.22@ucl.ac.uk 📍 London, United Kingdom

🌐 ayoussf.github.io in linkedin.com/in/ali-youssef1 🐙 github.com/ayoussf



EDUCATION

University College London <i>Master of Science (MSc) in Robotics and Computation (Artificial Intelligence)</i> Classification: Distinction.	London, United Kingdom Sep. 2022 – Sep. 2023
University of Glasgow <i>Bachelor of Engineering (BEng) in Mechanical Engineering</i> Classification: First-Class Honours.	Glasgow, United Kingdom Sep. 2016 – June 2020

EXPERIENCE

Research Intern – Computer Vision <i>Spatial Intelligence</i> <ul style="list-style-type: none">Contributed to the supervision of four postgraduate research projects as part of an academic-industry collaboration with the University of Bristol.Researched self-supervised Scene Coordinate Regression using multi-modal feature representation learning for robust and generalisable 3D scene reconstruction in real-world settings.Explored temporally consistent object detection architectures and learning paradigms for reliable video-based perception and object tracking in dynamic environments.Assisted in evaluating short- and medium-term research directions and their potential applications within Spatial Intelligence.	May 2025 – Present London, United Kingdom
Independent Researcher <i>University College London</i> <p>In collaboration with MSc supervisor:</p> <ul style="list-style-type: none">Extended MSc dissertation by developing pipelines to train feature detection and description models on synthetic multi-view datasets.Implemented comprehensive experimental evaluations to validate model performance across multiple benchmarks.Leveraged high-performance computing frameworks to enhance computational efficiency and accelerate training.Published research paper at ECCV 2024 (Map-free Visual Relocalization workshop).	Nov. 2023 – Sep. 2024 London, United Kingdom
Mechanical Engineer Intern <i>Porsche Middle East</i> <ul style="list-style-type: none">Conducted comprehensive vehicle diagnostics and initial inspections across a wide range of vehicles.Performed maintenance and repair tasks in coordination with workshop teams to ensure timely repairs.Verified all serviced vehicles met strict quality and safety compliance standards.	June 2019 – July 2019 Cairo, Egypt

PUBLICATIONS

VMatcher: State-Space Semi-Dense Local Feature Matching  Preprint	July 2025
NeRF-Supervised Feature Point Detection and Description  European Conference on Computer Vision (ECCV 2024), Map-free Visual Relocalization Workshop.	Sep. 2024

PROJECTS

Optimising Feature Point Detection and Description Using Novel View Synthesis <i>University College London</i> <ul style="list-style-type: none">Developed synthetic multi-view datasets using Neural Radiance Fields (NeRFs) to train feature point detection models under realistic camera trajectories and viewpoints.Employed perspective projection supervision to adapt models to NeRF-synthesised data, improving generalisability and reducing convergence time by 50%.Achieved superior performance on geometric vision tasks (pose estimation, point cloud registration, homography estimation) while requiring 97% less training data.	Mar. 2023 – Sep. 2023 London, United Kingdom
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Data-Centric Wind Power Forecasting via Recurrent Neural Networks

University of Glasgow

Oct. 2019 – Apr. 2020

Glasgow, United Kingdom

- Applied Recurrent Neural Networks (RNNs) for wind turbine power prediction.
- Evaluated anomaly detection algorithms (Isolation Forest, Elliptic Envelope, and DBSCAN) to demonstrate the impact of data preprocessing on regression accuracy and robustness.
- Benchmarked Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU) architectures, with GRU maintaining high accuracy while improving computational efficiency by 25%.

SKILLS


Programming Languages: Python, C++, MATLAB

Deep Learning Frameworks: PyTorch, Triton, JAX

Robotics: Robot Operating System (ROS)

Cloud Computing: Amazon Web Services (AWS)

CERTIFICATIONS

AWS Solution Architect - Associate (SAA-C02) 

Aug. 2022 - Aug. 2025