

Muhammad Maaz

+44 7751221493 · muhammad.maaz.23@ucl.ac.uk · LinkedIn: linkedin.com/in/m-maaz- · GitHub: github.com/MuhammadMaazA

EDUCATION

University College London

MEng Robotics and Artificial Intelligence

London, United Kingdom

Sep 2023 – Jun 2027

- First Year Grade: 82.34%
- Recipient of the UCL Global Undergraduate Scholarship awarded to only 10 international students, covering full tuition fees and living costs (£54,000).
- Relevant Coursework: Math 1 & 2 (Calculus, Linear Algebra, Probability, Optimization), Machine Learning, Data Structures & Algorithms, Object Oriented Programming, Reinforcement Learning, Systems Engineering, Modelling & Simulation, Optimisation, Filtering & Fusion

Cedar College

Cambridge International A Levels (5 A in Further Math, Math, Computer Science, Physics and Chemistry)*

Karachi, Pakistan

Aug 2021 – Jul 2023

- Awarded a 100% Merit Scholarship; recognized for excellence in Mathematics & Computer Science.
- Ranked in the top 50 nationwide in the IMO screening test and selected among Top 50 Under-20 Mathematicians (out of 8,000) for intensive IMO training.

EXPERIENCE

Freelance Coder

OutlierAI (Remote)

Nov 2024 – Present

- Reviewed and refined Python code generated by large language models, focusing on algorithmic efficiency and maintainability.
- Provided in-depth feedback to AI teams, helping them improve generative outputs in production pipelines.

Data Analytics & Machine Learning Intern

The Searle Company Limited, Karachi

Jun 2024 – Aug 2024

- Contributed to machine learning model development using image processing for defect detection, raising QC accuracy by 30%.
- Analyzed sales and inventory trends, reducing holding costs by 18% through predictive modeling and forecasting.
- Aligned production schedules with demand patterns, saving 10% in operational expenses.

Undergraduate Teaching Assistant

UCL Computer Science Department, London

Sep 2024 – Present

- Assisted with labs in Introduction to Electronics & Mechanical Systems, linking course theory to hands-on robotics.
- Demonstrated MATLAB and C for circuit design, sensor integration, and real-time control.

Student & Outreach Ambassador

UCL Computer Science Department, London

Feb 2024 – Present

- Conducted interactive workshops on coding and AI fundamentals for 100+ students from underrepresented communities.
- Collaborated with local partners to encourage diversity and inclusivity, expanding access to STEM education.

PROJECTS

Gripper Pose Simulation in PyBullet

- Built a simulation to classify robot gripper poses (stable vs unstable).
- Collected over 4000 samples with dynamic constraints and randomized gaussian noise to mimic real-world conditions.
- Trained a classifier using different Machine Learning Algorithms including Random Forest and SVM on balanced data, reaching 84% accuracy in predicting successful grasps.

Furuta Pendulum Simulation and Control

- Implemented swing-up & LQR controllers in Python, achieving a 90% success rate within two seconds of simulation.
- Ran parameter sensitivity tests (Monte Carlo) to ensure stable performance in varied conditions.

Alzheimer's Disease Detection Classification Model

- Analyzed GPS-based movement data to differentiate Alzheimer's patients from healthy individuals with 98% test accuracy.
- Examined segment complexity, duration of stops, segment similarity, total turning angle, travel distance, path complexity, and location entropy to uncover early-risk indicators.

WiFi-Based Indoor Localization

- Created neural network models using RSSI data, cutting localization error by 70%.
- Implemented PCA/t-SNE for feature reduction and clustering, enhancing reliability and real-time performance.

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, MATLAB
- **Libraries and Framework:** NumPy, Pandas, Scikit-Learn, TensorFlow, PyBullet, Keras, PyTorch
- **Tools:** Git, Slack, Jupyter, VS Code, ROS, Autodesk Fusion 360