

Omar Rayyan

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EDUCATION

New York University Abu Dhabi (NYUAD)

Double Major in Electrical Engineering & Computer Science

August 2021 - May 2025

GPA: 4.0/4.0

IE High School

Highest Grade in Physics and 7 IGCSEs across the Region

August 2018 - May 2021

GPA: 100.0/100.0

PUBLICATIONS

RCM-Constrained Manipulator Trajectory Tracking using Differential Kinematics

ICAR 2023

Rayyan, O., Gonçalves, V., Evangeliou, N., & Tzes

First-Author Conference Paper

RESEARCH EXPERIENCES

People, AI and Robotics Lab — Advised by Prof. Animesh Garg (Georgia Tech)

July 2024 - Present

Research Assistant

Atlanta, US

- Working on scaling data collection for imitation learning on Isaac-Sim, enabling large-scale parallelized data collection via pose-following inputs from widely accessible devices.
- Designed and developed **RoboTurk-v2**, a scalable data collection framework for imitation learning, enabling large-scale parallelized data collection via pose-following inputs from widely accessible devices. This work was submitted to **RSS 25'**

Center for AI and Robotics

September 2022 - Present

Research Assistant

Abu Dhabi, UAE

- Leading the **Tri-UMI** project, a continuation of the Universal Manipulation Interface (UMI) project, which enables data collection via handheld devices using multi-view cameras while mitigating domain shifts. The work is to be submitted to **CoRL 25'**.
- Open-sourced **MuJoCo AR**, a plugin enabling real-time integration of ARKit data from iOS devices to control MuJoCo frames and real robots
- Led the project to develop a surgical robotics controller capable of tracking trajectories within enclosed body cavities while minimizing insertion point impact on the skin Published and presented this work as a first-author at the International Conference on Advanced Robotics (**ICAR 23'**)

General Robotics and AI Lab — Advised by Prof. Lerrel Pinto (NYU)

January 2024 - March 2025

Research Assistant

New York, US

- Leading the **UntidyBot** project, a mobile manipulation framework designed to execute logical sequential actions in diverse environments beyond standard pick-and-place tasks, in collaboration with **Mahi Shafiullah**.
- Incorporating affordance metrics into ConceptGraph to represent objects articulabilities and interactions, adding dynamics to graph-based task planning

Applied Interactive Multimedia (AIM) Lab — NYUAD

February 2022 - July 2022

Student Researcher

Abu Dhabi, UAE

- Developed rehabilitation tasks using kinesthetic feedback via under-screen magnets to aid post-stroke recovery, in collaboration with Cleveland Clinic Abu Dhabi physicians

PROFESSIONAL EXPERIENCES

Google

Software Engineering Intern

Jul 2023 - Sep 2023

Munich, Germany

- Developed a tool for the **Google Space Control** team to automatically evaluate changes in resource configurations before their integration into the Google Cloud reliability pipeline
- My project earned an award by the team for creating an impact on their workflow during my internship

AWARDS AND HONORS

- Comma.ai Controls Competition** 2024
- 1st place in comma.ai's controls challenge by training a DDPG reinforcement learning agent to steer a car
- IEEEExtreme Coding Competition Podiums** 2022/23 & 2023/24
- Led a team to rank 3rd in 2023 and 4th in 2022 across the region at IEEE's programming competition
- Alfred H. Bloom Scholar** 2024
- Granted annually to **one** student for excellence in experiential learning and academic performance - [Letter](#)
- Deep Learning Graduate Course Competition** 2024
- Led an undergraduate team to podium in the graduate-level deep learning course competition at NYU
- Cambridge Outstanding UK Learner Award** 2021
- Achieved the highest mark in country in my Physics A-Level, and across 7 IGCSEs

SELECT PROJECTS

- UntidyBot** May 2024 - In Progress
- Mobile manipulation framework for executing logical sequential actions in diverse environments beyond pick-and-place tasks with PhD Mahi Shaifullah
- Portable Framework for Scalable Robot Policy Learning** May 2024 - In Progress
- Leading graduation project in creating a portable device for portable non-teleoperation data collection.
 - Implemented a data-processing and training pipeline for the Action Diffusion Policy and VQ-BeT architectures.
- MuJoCo AR** August 2024
- A [plugin](#) that enables the streaming of ARKit data from a connected iOS device for robot teleoperation in MuJoCo frames and beyond. Installed 12k+ times in the past two months
 - Designed and implemented a list of environments and tasks in MuJoCo accompanying the plug-in.
- LEBSI** November 2021 - May 2022
- Developed an [app](#) that enables people to set up online clothing stores in minutes. Reached #22 on the AppStore top charts.
- Past Code** January 2021 - May 2022
- Developed an [app](#) that uses Apple's vision framework to help students find supporting papers with over 500,000 usages.

Please check www.orayyan.com for a full list of my projects and experiences.

EXTRACURRICULAR AND LEADERSHIP

- Competitive Cubing (Rubik's Cube)** January 2017 - Present
- Set the official 4x4 **national record** (average and single) at an official WCA cubing competition
 - Competed in cubing events in Amman, Manama, New York, and Abu Dhabi
 - Led a Rubik's Cube speed-solving workshop at ZINC (Zain Innovation Campus)
- NYUAD 12th & 11th Hackathon for Social Good** April 2022 & April 2023
- Led the development team at NYUAD's Hackathon for Social Good to develop Tanabu, a package using machine learning to improve energy grid maintenance predictions
- Blood Donation App (Qatra)** April 2021
- Developed an app to streamline the process for hospitals to find compatible blood donors in urgent cases
 - Featured in a news segment in Jordan news