Omar Rayyan

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EDUCATION

University of California, Los Angeles (UCLA) — Setptember 2025 - Present
PhD Student (Advised by Prof. Yuchen Cui)

New York University (NYU) — August 2021 - May 2025
Double Major in Electrical Engineering & Computer Science — **GPA: 4.0/4.0 (Summa Cum Laude)**

EXPERIENCES

GRAIL (NYU Courant) — Advised by Prof. Lerrel Pinto — January 2024 - Present
Research Assistant — *New York, US*

- Collaborating with the AI2 PRIOR team on a THOR-based project.
- Developing MuJoCo-based simulation evaluation environments for RUM utility models.
- Led the UntidyBot project, a mobile manipulation framework designed to perform logical, sequential actions in diverse environments beyond standard pick-and-place tasks.
- Open-sourced MuJoCo AR, a plugin enabling real-time integration of ARKit data from iOS devices to control MuJoCo frames and real robots. Installed 20k times since release.

PAIR Lab (Georiga Tech) — Advised by Prof. Animesh Garg — July 2024 - Present
Research Assistant — *Atlanta, US*

- Scaling data collection for imitation learning using Isaac-Sim and MuJoCo, allowing users to teleoperate vectorized, cloud-hosted IsaacSim environment. Our COBALT project is currently in-submission.
- Designed and implemented custom environments and robotic manipulation tasks in simulation.

CAIR (NYU Abu Dhabi) — Advised by Prof. Anthony Tzes — September 2022 - July 2025
Research Assistant — *Abu Dhabi, UAE*

- Worked on MV-UMI a scalable multi-view interface for cross-embodiment learning. It allows UMI to use a third-person camera input while mitigating domain shifts. It is currently in submission.
- Formalized the Remote Center of Motion (RCM) constraint as an algorithmically optimizable task function for general-purpose robotic manipulators, diverging from the mechanically constrained approach of Da Vinci systems. I published and presented this work at the International Conference on Advanced Robotics (ICAR 23')

Google — Jul 2023 - Sep 2023
Software Engineering Intern — *Munich, Germany*

- Developed a tool 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 a direct impact on their workflow during my internship

Applied Interactive Multimedia (AIM) Lab — NYUAD — February 2022 - Sep 2022
Student Researcher — *Abu Dhabi, UAE*

- Worked on KATIB by developing rehabilitation tasks using kinesthetic feedback via under-screen magnets to aid post-stroke recovery, in collaboration with Cleveland Clinic Abu Dhabi physicians.

Select Publications and Software

COBALT: Crowdsourcing Robot Learning via Cloud-Based Teleoperation   Website
*Agarwal, A., Gandh, A., Collins, J., **Rayyan, O.**, Sarsawat, A., Koushik, R., .. & Garg, A.   In Submission*

RCM-Constrained Manipulator Trajectory Tracking using Differential Kinematics
***Rayyan, O.**, Gonçalves, V., Evangeliou, N., & Tzes*   *ICAR 2023*

MuJoCo AR
ARKit teleoperation for MuJoCo and the real world   *Repositry*

UntidyBot
ok-robot, beyond pick and place   *Repositry*

Past Code
App with over a million usages that helps students find supporting papers using their phone.   *App Store*

Awards and Honors

IEEE Best Project Prize   May 2025
- Awarded the best project prize by IEEE for my bachelor thesis across the UAE.

Comma.ai Controls Competition   Aug 2024
- 1st place in comma.ai's controls challenge by training a DDPG reinforcement learning agent to steer a car
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IEEEXtreme Coding Competition Podiums   2022/23 & 2023/24
- Led a team to podium twice across the region at IEEE's programming competition

Alfred H. Bloom Scholar   Jun 2024
- Granted annually to **one** student for excellence in experiential learning - (Letter)

Deep Learning Graduate Course Competition   May 2024
- Led an undergraduate team to podium in the graduate-level deep learning course competition at NYU

StartAD Innovention Competition Finalist   May 2022
- Founded LEBSI, a social marketplace, which reached the App Store top charts.

Cambridge Outstanding UK Learner Award   2021
- Achieved the highest mark in country and region in my Physics A-Level, and across 7 IGCSEs

Extracurriculars

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)