Ali Mohamed Ali
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Summary

Currently, I am a doctoral candidate and Lecturer, with a specialization in control systems, reinforcement learning, and applied AI.

Education

Ph.D. in Aerospace Engineering. *2023-Ongoing*

Carleton University/ Canada.

- Thesis: Nonlinear adaptive and robust feedback control for aerial robotics.

M.Sc in Control Engineering. *2022*

Sapienza University Roma / Italy.

- Thesis: Sparse deep reinforcement learning of controlling industrial assembly lines.

M.Eng/Bs.c in Mechanical Engineering. *2019*

Alexandria University / Egypt.

- Capstone project: Design and fabrication of heavy loaded Unnamed aerial vehicle under power and dimensions constraints.

Experience

Lecturer - Algonquin college. *05/2025 - Ongoing Ottawa/Canada.*

Part time professor.

- I am teaching mainly in Artificial Intelligence Software Development program: Reinforcement Learning CST8509.

Teaching Assistant - Carleton University. *01/2023 - Ongoing Ottawa/Canada.*

Teaching Assistant.

- I teach problem analysis sessions for: Dynamics (ECOR1048), Machine Learning (MAAE 4904), and Feedback Control systems (MAAE3500).

Innovation, Science and Economic Development Canada. *01/2024 -04/2024 Ottawa/Canada.*

Machine learning Engineer.

- As a part of the tranpancery and integrity team, my main role was building machine learning model to predict fraudulent activities in the corporations level.

SESAME - H2020. *10/2021 -10/2022 Rome/Italy.*

Research Intern.

- SESAME stands for Smart European Space Access through Modern Exploitation of Data Science. Project funded by the European Union. My main role was developing AI-based tools for decision support systems as a part of my Ms.c. thesis.

SAE-Aero Design Competition. *7/2015-3/2017/Texas-USA.*

Flight Dynamics Lead.

- My main role was the Optimization process of the design meeting the competition requirements and preparing technical data sheet of the aircraft performance.

Awards & Grants

- **Douglas Miller Scholarship - 2025.** *Carleton University.*
- **Student travel award - 2025.** *American Control Conference.*
- **Student travel award - 2024.** *American Control Conference.*
- **R.D. Richmond Travel Bursary - 2024.** *Carleton University.*
- **Nomination for outstanding teaching assistants - 2024.** *Carleton University.*
- **Best Paper in Automatic Control Track - 2023.** *IEEE World AIIoT Congress.*
- **Best Presenter in Artificial Intelligence Tools - 2023.** *IEEE World AIIoT Congress.*
- **Path of Excellence in Control Engineering - 2022.** *University of Rome la Sapienza.*

Administrative & Editorial Positions

- **IEEE Student Member.** *2023 - Ongoing / IEEE.*
- **Student representative for control engineering.** *2021 - 2022 / University of Rome la Sapienza.*
- **Reviewer: IEEE/ASME Transactions on Mechatronics.** *2024 - Ongoing / IEEE/ASME.*
- **Reviewer: IEEE transactions on industrial electronics.** *2024 - Ongoing/IEEE.*
- **Reviewer: IEEE American Control Conference (ACC).** *2024 - Ongoing / IEEE.*

- **Reviewer: IEEE Conference on Decision and Control (CDC).** *2024 - Ongoing / IEEE.*
- **Reviewer: IET Control Theory & Applications.** *2023 - Ongoing / Wiley.*
- **Reviewer: Drone Systems and Applications.** *2023 - Ongoing / Canadian Science Publishing.*

PUBLICATIONS

Journal Publications:

J[1] Ali Mohamed Ali, Chao Shen, Hashim A. Hashim "A Linear MPC with Control Barrier Functions for Differential Drive Robots", IET Control Theory and Applications. .

J[2] Ali Mohamed Ali, Aryaman Gupta, and Hashim A. Hashim "Deep Reinforcement Learning for Sim-to-Real Policy Transfer of VTOL-UAVs Offshore Docking Operations" Applied Soft Computing.

J[3] Luca Tirel, Ali Mohamed Ali, and Hashim A. Hashim "Hybrid Integrated Pix2Pix and WGAN Model with Gradient Penalty for Binary Images Denoising" Systems and Soft Computing.

Conference Publications:

C[1] Ali Mohamed Ali, Luca Tirel, "Action Masked Deep Reinforcement learning for Controlling Industrial Assembly Lines" 2023 IEEE World AI IoT Congress (AIIoT), Seattle, WA, USA.

C[2] Ali Mohamed Ali, Hashim A. Hashim, and Chao Shen "MPC for Safety-Critical Navigation of VTOL-UAVs", 2024 IEEE American Control Conference (ACC).

C[3] Ali Mohamed Ali, Hashim A. Hashim, and Awantha Jayasiri "A Unified Finite-Time Sliding-Mode Quaternion-Based Tracking Control for Quadrotor UAVs without Time Scale Separation", 2025 IEEE American Control Conference (ACC).