

# Luca Russo

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🔗 <https://github.com/Aliothy> 🌐 Personal Website

## Education

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### UIC-UNIVERSITY OF ILLINOIS AT CHICAGO

- PhD student in Mechanical and Industrial Engineering
- Master of Science in Electrical and Computer Engineering

In Progress-GPA 4.00/4.00  
October 2024-GPA 4.00/4.00

### POLITECNICO DI TORINO | Turin, Italy

- Master of Science in Mechatronics Engineering
- Bachelor of Science in Aerospace Engineering

October 2024–final grade 110 cum laude/110  
July 2022–final grade 110 cum laude/110

## Technical Skills

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### PROGRAMMING LANGUAGES: C, C++, Octave, Python.

**SOFTWARES:** Arduino IDE, Automation Studio, Codesys, Confluence, FluidSim, Git, Jira, LTSpice, Matlab, Microsoft Office, MuJoCo, ROS, ROS 2, Simscape, Simulink, Stateflow.

**CAD and STRUCTURAL ANALYSIS:** SolidWorks, Catia V5, Hypermesh, Patran and Nastran.

## Relevant Experiences

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### UIC

#### Research Assistantship - PhD student

January 2024 – Current

C++, Python, Linux System

- Developing C++ and Python ROS2 nodes for controlling drones in heterogeneous robotics systems.
- Simulating the coded algorithm both in simulation environments (Gazebo / MuJoCo) and hardware implementation.
- Developed and implemented advanced path and motion planning algorithms for coordinated UAV-UGV systems, including PRM, A\*, and MILP-based routing in obstacle-rich environments.

#### Research Assistantship - Master's Thesis

- Modeling and implementation of a highly non-linear legged microrobot in the MuJoCo simulation environment.
- Coding and development of a closed-loop control algorithm through Deep Reinforcement Learning.

### Chicago EDT-STUDENT TEAM

January 2024 – Present

C++, Python, Linux System

#### Leader of the Control System Team

- Leading the team that designed the control systems for a digging robot for the NASA challenge LUNABOTICS.
- Developing the main navigation algorithm by estimating the position of the robot through IMU, cameras, and motor encoders by using the Isaac ROS Visual SLAM package.
- Awarded the 5th place of the Caterpillar Autonomy Award

## Internship Experience

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### PROGEM srl

April 2022 – June 2022

#### Quality Engineer Intern

Carmagnola, Italy

- Tested aerospace components and drafted the needed quality documentation according to the ISO 9001 and AS 9100.

## Publications

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- [1] L. Russo, E. Chandler, K. Jayaram, and A. R. Trivedi, "Dynamic resonance frequency identification for economic insect-scale legged robot locomotion," in *2024 6th International Conference on Control and Robotics (ICCR)*, 2024, pp. 142–146. doi: 10.1109/ICCR64365.2024.10927506.
- [2] L. Russo, M. S. Mondal, S. Ramasamy, J. D. Humann, J. M. Dotterweich, and P. A. Bhounsule, "Precision auto-landing of an aerial vehicle on a moving ground vehicle: A modular ros2 approach," *ASME IDETC-CIE*, 2025, Accepted for publication.