Luca Russo

+1 872 279 9425 luca.russo2000@gmail.com https://www.linkedin.com/in/lucarusso2000
https://github.com/Aliothy

Education

UIC-UNIVERSITY OF ILLINOIS AT CHICAGO

- PhD student in Mechanical and Industrial Engineering — September 2024-GPA 4.00/4.00
- Master of Science in Electrical and Computer Engineering — October 2024–GPA 4.00/4.00

POLITECNICO DI TORINO | *Turin, Italy*

- Master of Science in Mechatronics Engineering — October 2024–final grade 110 cum laude/110
- Bachelor of Science in Aerospace Engineering — July 2022–final grade 110 cum laude/110

Technical Skills

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

UIC — January 2024 – Current

Research Assistantship - PhD student — *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.

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

Leader of the Control System Team — *C++, Python, Linux System*

- 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

PROGEM srl — April 2022 – June 2022

Quality Engineer Intern — *Carmagnola, Italy*

- Tested aerospace components with measurement tools such as calipers and coordinate-measuring machines.
- Drafted the needed quality documentation according to the ISO 9001 and AS 9100.

Projects

Stewart's platform | *Matlab, Simulink* — January-June 2023

- Studied the Inverse kinematic of the Platform by using linear analysis tools such as roto-translation matrices.
- Designed a controller in Simulink to stabilize the position of a ball posed on top of the platform.

Satellite position estimation | *Python, Google Earth Engine* — September-December 2023

- Implemented and tuned an Extended Kalman filter to estimate the trajectory of the Landsat 7 satellite from the images taken from the Google Earth Engine platform.

Publications

Dynamic Resonance Frequency Identification for Economic Insect-scale Legged Robot Locomotion, L.Russo, E. Chandler, K. Jayaram, A. R. Trivedi. Accepted for publication in *IEEE International Conference on Control and Robotics (ICCR)*, December 2024