Giuseppe **L'Erario**

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Education

Ph.D Student at the University of Manchester — *Genova, Italy*

SPLIT-SITE PH.D WITH ISTITUTO ITALIANO DI TECNOLOGIA AND THE UNIVERSITY OF MANCHESTER — *2020 - Present*

- Topic: optimization and control techniques for multimodal locomotion, under the supervision of Prof. Angelo Cangelosi.

MSc in Artificial Intelligence and Robotics — *Rome, Italy*

SAPIENZA UNIVERSITÀ DI ROMA — *2016 - 2019*

- Thesis: "Modeling, Identification, and Control of Model Jet Engines for Aerial Humanoid Robotics" in AMI lab (IIT, Genova - Italy) under the supervision of Dr. Daniele Pucci and Prof. Alessandro De Luca.

BSc in Aerospace Engineering — *Rome, Italy*

SAPIENZA UNIVERSITÀ DI ROMA — *2009 - 2015*

- Thesis: "Flameholder geometry for ramjets and afterburners" under the supervision of Prof. Fausto Gamma.

Experience

Ph.D. Research Fellow at Artificial and Intelligence Lab — *Genova, Italy*

ISTITUTO ITALIANO DI TECNOLOGIA — *Jan. 2020 - Present*

- Working in the context of the iRonCub project for my research under the supervision of Dr. Daniele Pucci

Research Fellow at Artificial and Intelligence Lab — *Genova, Italy*

ISTITUTO ITALIANO DI TECNOLOGIA — *Jun. 2019 - Dec. 2019*

- Working in the context of the iRonCub project under the supervision of Dr. Daniele Pucci, for my master thesis.

Visiting Student at Artificial and Intelligence Lab — *Genova, Italy*

ISTITUTO ITALIANO DI TECNOLOGIA — *Feb. 2019 - May. 2019*

- Working in the context of the iRonCub project under the supervision of Dr. Daniele Pucci, for my master thesis.

SPQR@Work team member — *Roma, Italy*

SAPIENZA UNIVERSITÀ DI ROMA — *Oct. 2017 - Feb. 2019*

- Developing the navigation module for the SPQR@Work team, a spin-off of the S.P.Q.R. RoboCup team.

Skills

Programming	Python, Matlab, LaTeX, experience with C++
Tools and Libraries	git, Gazebo, Yarp, Linux, experience with ROS
Languages	Italian (native), English (IELTS score 7.5)

Libraries

- **ADAM**: a library that computes rigid-body dynamics in Jax, CasADi, PyTorch, and Numpy.
- **liecasadi**: Rigid transform using Lie groups, written in CasADi.
- **matlab-whole-body-simulator**: a robot simulator running on Simulink.

Publications

- F. Bergonti, G. Nava, L. Fiorio, G. L'Erario, D. Pucci, "**Modeling and Control of Morphing Covers for the Adaptive Morphology of Humanoid Robots**", IEEE Transactions on Robotics, 2022.
- A. Momin, G. Nava, G. L'Erario, H.A.O. Mohamed, F. Bergonti, P.R. Vanteddu, F. Braghin, D. Pucci, "**Nonlinear Model Identification and Observer Design for Thrust Estimation of Small-scale Turbojet Engines**", International Conference on Robotics and Automation, 2022
- G. Romualdi, S. Dafarra, G. L'Erario, I. Sorrentino, S. Traversaro, D. Pucci, "**Online non-linear centroidal MPC for humanoid robot locomotion with step adjustment**", International Conference on Robotics and Automation, 2022
- T. Hui, A. Paolino, G. Nava, G. L'Erario, F. Di Natale, F. Bergonti, F. Braghin, D. Pucci, "**Centroidal Aerodynamic Modeling and Control of Flying Multibody Robots**", International Conference on Robotics and Automation, 2022
- H.A.O. Mohamed, G. Nava, G. L'Erario, S. Traversaro, F. Bergonti, L. Fiorio, P.R. Vanteddu, F. Braghin, D. Pucci, "**Momentum-based extended Kalman filter for thrust estimation on flying multibody robots**", IEEE Robotics and Automation Letters, 2021
- G. L'Erario, L. Fiorio, G. Nava, F. Bergonti, H.A.O. Mohamed, E. Benenati, S. Traversaro, D. Pucci, "**Modeling, Identification and Control of Model Jet Engines for Jet Powered Robotics**", IEEE Robotics and Automation Letters, 2020.
- R.A. Romeo, L. Fiorio, G. L'Erario, M. Maggiali, G. Metta, D. Pucci, "**Dynamic control of a rigid pneumatic gripper**", IEEE Robotics and Automation Letters, 2020.