

EVELYN D'ELIA

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EDUCATION

- University of Manchester**, Manchester, United Kingdom **Jan 2023 - Dec 2026**
Ph.D. in Computer Science
Courses: Topics in Modern Machine Learning (DIBRIS, University of Genoa, Italy), RobotX summer school (ETH Zurich, Switzerland), Control and Machine Learning (EECI, Dubrovnik, Croatia)
- Delft University of Technology**, Delft, Netherlands **Aug 2019 - Aug 2021**
Master of Science in Systems and Control
Honors: TU Delft Excellence Scholarship, Holland Scholarship
Relevant Courses: Control Theory, Knowledge-Based Control, Optimization, Nonlinear Systems, Filtering and Identification, Dynamic Programming, Multivariable Control, Robot Motion and Control, Robotics Practicals
- Northeastern University**, Boston, MA, USA **Sept 2014 - May 2019**
Bachelor of Science in Mechanical Engineering, minor in Robotics
Honors: Magna cum laude, Dean's Scholarship, Member of Honors Program, Dean's List (all semesters)
Relevant Courses: Classical Control Systems, Robotics Sensing and Navigation, Robot Dynamics and Control, Systems and Control, Machine Learning, Linear Systems, Engineering Design, Electronics, Modern Physics, Probability and Statistics
- Lund University**, Lund, Sweden **Aug 2017 - Dec 2017**
Courses: Service Robotics, Dynamics and Vibrations, Electromagnetism, Finite Element Analysis

EXPERIENCE

- SAIL, Italian Institute of Technology (IIT)**, Genoa, Italy and **Centre for AI Fundamentals, University of Manchester**, Manchester, U.K. **Jan 2023 – Dec 2026**
Ph.D. Thesis
- Developed physics-informed behavior cloning technique for humanoid trajectory generation and deployed on humanoid ergoCub robot
 - Studied group theory and model-based RL to construct equivariant Koopman-informed learning framework
 - Validated physics-informed and model-based approaches on humanoid and quadruped robots
 - Wrote multiple publications on the studied topics: [physics-informed learning](#), [symmetric Koopman predictions](#)
 - Supervised a master's thesis student, resulting in a [submission](#) for publication
- AMI Lab, Italian Institute of Technology (IIT)**, Genoa, Italy **Mar 2022 – Dec 2022**
Research Fellow
- Implemented deep learning techniques for physics-informed trajectory generation on the humanoid ergoCub robot
- LARSEN Lab, INRIA**, Nancy, France **Jan 2021 – Jul 2021**
M.Sc. Thesis: Automatic Controller Selection on a Humanoid Robot
- Implemented multi-objective optimization of hyperparameters of whole-body controller framework, achieving efficient transfer of previously learned controller sets to new robot trajectories via a Bayesian optimization
 - Successfully validated the optimized controllers on the Talos humanoid robot ([video](#))
 - Results presented as [extended abstract](#) at ICRA 2021 Workshop on Legged Robots, [paper](#) published in IROS 2022 proceedings
- College of Engineering, Northeastern University**, Boston, MA, USA **Jul 2018 – Dec 2018**
Senior Design Project
- Worked on a student team to develop an in-process volume measurement system for cold spray metal manufacturing applications
- SPIRAL Lab, Northeastern University**, Boston, MA, USA **Sep 2018 – Apr 2019**
Research Assistant

- Worked to set up a Mujoco simulation to test the efficacy of common reinforcement learning algorithms to train a prosthetic hand to grasp objects

DLS Lab, Italian Institute of Technology (IIT), Genoa, Italy
Robotics Intern

Jan 2018 – Jun 2018

- Performed various tests to optimize hyperparameters of the CNN architecture in order to determine which yields the highest validation accuracy

MIT Lincoln Laboratory, Lexington, MA, USA
Mechanical Design Co-op

Jan 2017 – Jun 2017

- Created test plan, fixture, and LabVIEW data acquisition program, and carried out test to minimize shock for flexible composite deployable hinge; co-authored [paper](#) detailing test design and results

Senior Aerospace Metal Bellows, Sharon, MA, USA
Manufacturing Engineering Co-op

Jan 2016 – Jun 2016

- Learned Visual Basic and wrote a program in Excel to generate welding data for each production part based on user inputs, allowing welding information to be more readily accessible to fellow engineers and welders

Aerospace Club (AIAA), Northeastern University, Boston, MA, USA
Team Lead - Project Karman

Sep 2015 – Jun 2017

Jan 2016 – Jun 2017

- Oversaw design of multiple iterations of an avionics bay to house electronics for subscale tests of rocket
- Managed design and manufacture of model rocket and its parachute deployment system

Ericsson, Piscataway, NJ, USA
Summer Intern

May 2015 – Aug 2015

- Wrote various test cases in Java language using Selenium test software to validate functions of a cloud management system GUI

SKILLS

Computer	C/C++, Python (with TensorFlow, Keras), Bash scripting, Git, ROS, MATLAB/Simulink
Mechanical	Soldering, 3-D printing, laser cutting; mill, lathe, band saw
Leadership	Maintaining a positive attitude in the face of setbacks, creating and adhering to project time-lines, explaining complex concepts
Language	Native English, C2 Italian, B1 French

PUBLICATIONS

Under Review

A. Grieco, **E. D’Elia**, E. Caldarelli, R. Camoriano. “Bridging Exploration and Loss of Plasticity in On-Policy Reinforcement Learning,” *Submitted to 2027 Conference on Artificial Intelligence and Statistics (AISTATS)*.

Accepted

E. D’Elia, W. Zhan, G. Romualdi, G. L’Erario, R. Camoriano, W. Pan, D. Pucci. “SKooP: Symmetric Koopman Predictions for Faster and More Generalizable Legged Robot Locomotion with Reinforcement Learning,” *2026 IEEE International Conference on Intelligent Robots and Systems (IROS)*. [arxiv](#)

E. D’Elia, P. M. Viceconte, L. Rapetti, D. Ferigo, G. Romualdi, G. L’Erario, R. Camoriano, D. Pucci. “Stabilizing Humanoid Robot Trajectory Generation via Physics-Informed Learning and Control-Informed Steering,” *2025 IEEE International Conference on Intelligent Robots and Systems (IROS), Hangzhou, China*. [doi](#)

E. D’Elia, J.-B. Mouret, J. Kober, and S. Ivaldi. “Automatic Controller Tuning and Selection for a Whole-Body Controller,” *2022 IEEE International Conference on Intelligent Robots and Systems (IROS)*. [doi](#)

E. D’Elia, J.-B. Mouret, J. Kober, and S. Ivaldi. “Learning Task Controllers on a Humanoid Robot Using Multi-Objective Optimization,” in *ICRA 2021 5th Workshop on Legged Robots*. 2021. [abstract](#), [presentation](#)

M. A. Echter, M. J. Silver, **E. D’Elia**, M. Peterson, & B. M. Reid. “Recent Developments in Precision High Strain Composite Hinges for Deployable Space Telescopes,” *2018 AIAA Spacecraft Structures Conference*, pp. 0939. [doi](#)