

Luigi Catello

PhD student

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About me

I am a young engineer and PhD student based in Napoli. I work on complex, multi-agent systems, learning-based solutions, and cross-scale operators.

I am driven by curiosity and enthusiasm for science, technology, and the endless possibility they offer.

Education

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| PhD | Scuola Superiore Meridionale , Modeling and Engineering Risk and Complexity
<ul style="list-style-type: none"> • Project title: Certified Cross-Scale Bridges for Multiscale Control of Large-Scale Multiagent Systems via Physics-Informed Learning and Neural Operators • Supervisors: Prof. Mario di Bernardo, Prof. Costantinos Siettos, Davide Salzano (PhD) • Keywords: multi-scale control, multi-agent systems, micro-macro bridges, physics-informed learning, mean-field control | Napoli, Italy
Oct 2025 – present |
| MS | Università degli Studi di Napoli Federico II , Automation and Robotics Engineering
<ul style="list-style-type: none"> • Thesis: Learning-based multiscale herding control for multi-agent complex systems • Supervisors: Prof. Mario di Bernardo, Davide Salzano (PhD), Italo Napolitano • Final grade: 110/110 cum laude • GPA: 29.50/30 • Main themes covered: <ul style="list-style-type: none"> • Optimal Control Theory • Nonlinear Control • Operations Research • Optimization • Robotics (Modelling and Programming) | Napoli, Italy
Oct 2022 – Oct 2025 |
| Eras-
mus+ | Tampere University , Engineering
<ul style="list-style-type: none"> • Main themes covered: <ul style="list-style-type: none"> • Computer Vision • Distributed and Intelligent Automation Systems • Microcontrollers | Tampere, Finland
Jan 2022 – May 2022 |
| BS | Università degli Studi di Napoli Federico II , Automation Engineering
<ul style="list-style-type: none"> • Thesis: Neural Networks for Instance Segmentation • Supervisor: Prof. Giovanni Poggi • Final grade: 110/110 cum laude • GPA: 29.24/30 • Main themes covered: <ul style="list-style-type: none"> • Fundamentals (calculus, physics, linear algebra, etc.) • Electronics • System Theory • Control Theory | Napoli, Italy
Sept 2019 – Oct 2022 |

Experience

Freelancer, Backend developer

- Backend developer for websites with databases
- Main languages used: PHP, MySQL

Napoli, Italy

Jan 2021 – present

5 years 6 months

Publications

Sparse shepherding control of large-scale multi-agent systems via Reinforcement Learning

2026

Luigi Catello, Italo Napolitano, Davide Salzano, Mario di Bernardo

[10.48550/arXiv.2511.21304](https://arxiv.org/abs/10.48550/arXiv.2511.21304) (Proceedings of ECC2026)

Skills

Languages: Italian (mother tongue), English (C1 level)

Digital skills: MATLAB and Simulink, Python, C++, PHP and MySQL, Git and version control, Virtual Machines, VBA, Windows/MacOS/Ubuntu, Latex, ...