PAOLO CONTI

@ paolo.conti@polimi.it +39 3406332219 linkedin.com/in/paolo-conti github.com/ContiPaolo

EDUCATION

PhD in Mathematical and Civil Engineering
May 2021 – May 2024

Politecnico di Milano (Milan, Italy)

Research about reduced order modeling for nonlinear dynamical systems:
- Development of physical based AI/ML for model order reduction and system identification. Application to fluid dynamics and structural mechanics (in particular micro-electrical mechanical systems).
- Development of multi-fidelity techniques to accelerate high-fidelity simulations by leveraging reduced order model solutions.

MSc in Mathematical Engineering: *Modeling & Data Analysis*
Sept 2018 – Apr 2021

Politecnico di Milano (Milan, Italy) **Score: 110/110 cum laude**

- **MSc. Thesis**: *"Multifidelity regression with multistep artificial neural networks"*. Tutor: Prof. Andrea Manzoni
- **Main courses**: Applied and Bayesian Statistics, Model identification and data analysis, Algorithms and Parallel Computing, Advanced programming for scientific computing, Advanced partial differential equations and numerical analysis.

Visiting student — Erasmus+
Sept 2019 – July 2020

Sorbonne Université (Paris, France)

BSc in Mathematical Engineering
Sept 2015 – Sept 2018

Politecnico di Milano (Milan, Italy) **Score: 110/110**

- **BSc. Thesis**: *"Stationary Schrödinger equation: existence of a fundamental state"*. Tutor: Prof. Sandro Salsa.

Visiting student — Erasmus+
Aug 2017 – Jan 2018

Budapest University of Technology and Economics (Budapest, Hungary)

EXPERIENCES

Research PhD Intern @ AI Institute of Dynamic Systems
Oct 2022 – May 2023

University of Washington (Seattle (WA), USA)

Research about reduced order modeling and nonlinear dynamical system identification via physics-informed AI/ML. Advisors: Prof. Nathan Kutz, Prof. Steven Brunton.

Teaching assistant
Sept 2021 – May 2022

Politecnico di Milano (Milan, Italy)

Courses: Dynamics, Scientific and technical communication.

International gymnastic coach and choreographer
Work experiences in Italy, France, Finland, Hungary and Lithuania since 2016.

PUBLICATIONS

- **P. Conti**, G. Gobat, S. Fresca, A. Manzoni, A. Frangi. *"Reduced order modeling of parametrized systems through autoencoders and SINDy approach: continuation of periodic solutions"*, arXiv preprint arXiv:2211.06786.
- **P. Conti**, M. Guo, A. Manzoni, J.S. Hesthaven. *"Multi-fidelity surrogate modeling using long short-term memory networks"*, Computer methods in applied mechanics and engineering 404, 115811, 2023.
- M. Guo, A. Manzoni, M. Amendt, **P. Conti**, J.S. Hesthaven. *"Multi-fidelity regression using artificial neural networks: efficient approximation of parameter-dependent output quantities"*, Computer methods in applied mechanics and engineering 389, 114378, 2022.

CONFERENCES AND SUMMER SCHOOLS

AAAI Symposium on Computational Approaches to Scientific Discovery — March 2023

Participant and oral presenter at the "Computational Approaches to Scientific Discovery" symposium, in San Francisco.

SIAM Conference on Computational Science and Engineering (CSE23) — February 2023

Participant and oral presenter at the "Perspectives on Data-Driven Reduced-Order Modeling" symposium of SIAM CSE23 conference, in Amsterdam.

Workshop on Common Task Framework for AI in Science and Engineering — February 2023

Participant and poster presenter at the workshop organized by the Artificial Intelligence Institute in Dynamic Systems at University of Washington, in Seattle.

Neural Information Processing Systems (NeurIPS 2022) — November 2022

Mediterranean Machine Learning (M^2L) Summer School — September 2022

Participant and poster presenter at the M^2L school organised by the *AI Education Foundation* and *DeepMind* in Milan.

Mathematics of Machine Learning Summer School — August 2022

Participant at the school organised by the *Mathematical Sciences Research Institute* (MSRI) in New York and Cortona.

Deep Learning Summer School — July 2021

Participant and winner of best project presentation award at the school organised by the *Machine Learning Genoa Center*.

SCIENTIFIC PROJECTS

- **Model identification** Python MATLAB *"Modeling from measurements"*: Dynamic system identification via deep learning.
- **Applied Statistics** R *"What do you need to climb the charts?"*: Analysis of Spotify Dataset.
- **High performance computing** CUDA *"GPU Merge Path"*: Batch merge and merge path sort algorithms.
- **C++ projects** C/C++ *"PDE Poisson solver in C++"*: Implementation of finite difference resolution with UMFPACK.

SKILLS

Programming Languages and Frameworks:

Advanced	C/C++, MATLAB, R, Python.
Proficient	CUDA, SQL, MPI.

ACHIEVEMENTS

Academic awards

- Best project presentation award at *Deep Learning Summer School* at the Machine Learning Genoa Center on July 2021.
- *Academic & Sporting Merit scholarship*: Four times recipient of the *Academic and Sporting Merit* scholarship, established by Politecnico di Milano, in 2015, 2016, 2017, 2018.

Sport Awards
in Aerobic Gymnastics

- *Silver medal of Athletic Value* winner, awarded by Italian National Olympic Committee, in 2016 - 2017.
- *Oscar of Gymnastics* winner, awarded by Italian National Olympic Committee, in 2015.
- World Championship medallist in 2020, 2016 and European Champion in 2015.
- Italian National Champion in 2021 and member of the National Team since 2010.

LANGUAGES

Italian	Native language	**English**	Professional - IELTS 7.5
French	B2 - Sorbonne Université Certificate	**Spanish**	Basic Level

ASSOCIATIONS

Volunteer in *Bergamo Pride*
LGBTQIA+ rights activist since 2020.

Current member of AIM
Mathematical Engineer's Society at Politecnico di Milano since 2017.

Member of Polimi Data Scientists
Since 2019.