

Gianluca Covini

Mathematics Master's at UniPv | Upcoming PhD candidate at WIAS in Statistical OT

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Work experience

Researcher in Optimization Under Uncertainty

University of Cyprus/VU Amsterdam

Oct 2024 – Feb 2025 Remote

- Informal research collaboration on the theme: "Submodular functions for Distributionally Robust Optimization";
- Supervisors: **Prof. Angelos Georghiou**, **Prof. Rosario Paradiso**.

Academic tutor

University of Pavia

Oct 2021 – Feb 2025 Pavia, Italy

- Teaching assistant for Calculus courses in the Engineering Bachelor's program and for Probability courses in the Artificial Intelligence and Mathematics Bachelors' program.
- Supervisors: **Prof. Elisabetta Rocca**, **Prof. Abramo Agosti**, **Prof. Emanuele Dolera**, **Prof. Carlo Orrieri**.

Statistics Summer Research Intern

University of Cambridge

Jul 2024 – Aug 2024 Cambridge, UK

Research report

- Summer researcher at the Statistical Laboratory, University of Cambridge on the theme: "Simulation Study on the Statistical Properties of Stochastic Optimization Problems";
- Supervisors: **Prof. Qingyuan Zhao**, **Tobias Freidling**

Researcher in Operations Research

LIP6 - Sorbonne Université/CNRS

Mar 2024 – Jul 2024 Paris, France

- Researcher in "Dynamic Algorithm Configuration" developing optimal parameter policies for genetic algorithms in Python.
- Results to be presented at **ROADEF 2025**.
- Supervisor: **Prof. Carola Doerr**.

Machine Learning Researcher

Sphaera

Aug 2023 – Feb 2024 Hybrid

Brief report

- Responsible for the development of a tracking algorithm for 5-a-side soccer in Python using libraries Numpy, Pytorch, OpenCv, Matplotlib.
- Supervisors: **Dr. Mirko Messori**, **Dr. Giuseppe Roberto Marseglia**.

Lecturer

Almo Collegio Borromeo

Oct 2023 – Dec 2023 Pavia, Italy

- Designer and lecturer of the course "Advanced Computational Statistics", with theoretical lectures and applications to real-world data in R;
- Supervisor: **Prof. Emanuele Dolera**.

Education

PhD Candidate in Statistical Optimal Transport

WIAS Berlin

Apr 2025 – Mar 2028 Berlin, Germany

- Incoming PhD candidate in Statistical Optimal Transport at WIAS, Berlin (April 2025).
- Supervisor: **Dr. Jia-Jie Zhu**.
- Research Focus:** Statistical Optimal Transport, Distributionally Robust Optimization, Machine Learning, Generative Models, and Nonparametric Statistics.

Master's in Mathematics

Grade: 110/110 cum laude; GPA: 29.5/30

University of Pavia

Sep 2022 – Feb 2025 Pavia, Italy

- Relevant courses:** Functional Analysis, Machine Learning, Econometrics, Statistical Methods, Mathematical Finance, Biomathematics, Finite Elements Method, Advanced Probability, Stochastic Processes, Dynamical Systems.
- Thesis:** *Dynamic Parameter Policies for Leading Ones on Enhanced State Spaces*, Supervisors: **Prof. Carola Doerr**, **Prof. Stefano Guandalini**.

Erasmus+ Traineeship Mar 2024 – Jul 2024

- Research internship for Master's Thesis at *LIP6 Sorbonne Université/CNRS* in Paris, France.

Alumnus of Merit-Based Program

Collegio Borromeo

Sep 2022 – Jul 2024 Pavia, Italy

- Among the few applicants selected for a merit-based college program, which included accommodation benefits, personal tutor and personalized formative plan;
- Awarded with a 2000€ scholarship for being among the best students of the program.

Bachelor's in Mathematics

Grade: 110/110 cum laude; GPA: 29.8/30

University of Pavia

Oct 2019 – Sep 2022 Pavia, Italy

- Relevant courses:** Linear Algebra, Mathematical Analysis 1, 2, 3 and 4, Programming 1 and 2, Probability, Statistics, Optimization Algorithms and Models for Data Science (Operations Research), Foundations of Data Analysis, Numerical Analysis, Numerical Modeling;
- Thesis:** *Ewens Sampling Formula and Applications to Biodiversity*, Supervisor: **Prof. Emanuele Dolera**.

Auditor & Data Analyst

JE Italy

📅 Oct 2022 – Oct 2023

- Monitoring and analysis of data within the confederation;
- Audit consulting services for junior enterprises.

IT consultant

JECO Pavia

📅 May 2021 – Sep 2023 📍 Pavia, Italy

🔗 <https://jecopavia.it/>

- Data management activities;
- PMI digitalization projects.

Head of IT 📅 Sep 2021 – Oct 2022

- Area members management;
- Annual strategy planning using OKR.

Certifications

- TOEFL iBT 106/120 (C1), **ETS**, Oct 2024
- GRE Q168 V162, **ETS**, Oct 2024
- *Getting Started with Deep Learning*, **NVIDIA**, Mar 2023
- *Introduction to startups*, **Pack**, Jan 2022
- *IBM Data Science*, **IBM through Coursera**, Mar 2021
- *Startups 101: Come portare un'idea sul mercato*, **Entrepreneurship Club Pavia**, Dec 2020
- *Delf B1*, **Ministère de l'éducation nationale**, Aug 2016

Informatic skills

- **Proficient** in Matlab Python, including libraries such as NumPy, Pandas, Matplotlib, OpenCV, Pyomo, and Multiprocess, and LaTeX.
- **Working knowledge** of R, Excel, Gurobi, CPLEX, Git, and AWS.
- **Basic knowledge** of Linux, WordPress, and Julia.

Interests

- Operations Research, in particular optimization under uncertainty;
- Statistics and Stochastics;
- Machine Learning and Reinforcement learning;
- Political Economy;
- Game Theory;
- Semiotics.

Extracurricular courses:

PhD Winter School on Advanced Stochastic Optimization

NTNU

📅 Dec 2024

📍 Trondheim, Norway

Topics included: mixed-integer stochastic programming, treeless sequential decision making under uncertainty, distributionally robust optimization, dual decomposition, Benders' decomposition, SDDP and applications in hydropower scheduling.

2nd Copenhagen PhD School of Stochastic Programming

University of Copenhagen

📅 Jun 2024

📍 Copenhagen, Denmark

Topics included: introduction to stochastic programming, stochastic programs with multiple time horizons, bounding techniques in optimization under uncertainty, scenario generation methods, risk-aversion in stochastic programming, stochastic programs with decision-dependent Uncertainty.

Applied Mathematics School

KAUST

📅 Nov 2023

📍 Thuwal, Saudi Arabia

Highly selective 1-week visiting program aiming to introduce undergraduate and master's students to special research topics focusing on key areas in applied mathematics and computational science.

Intensive School in Data Science

ISAGS - University of Pavia

📅 Sep 2020

📍 Pavia, Italy

PhD-level intensive course (70h) on Machine Learning and applications in chemistry, genomics and neurosciences.

Extracurricular experiences

Volunteer

Sant'Egidio - Youth for Peace

📅 Jul 2022 – Sep 2022

📍 Pavia, Italy

- Recreational activities for children in difficult situations;
- Activities to counter school dropout.

Activity manager

Entrepreneurship Club Pavia

📅 Oct 2020 – Sep 2021

📍 Pavia, Italy

- Organization of public events with entrepreneurs and startupers, such as Nicolò Santin, Ivan Mazzoleni, Mario Bini;
- Internal activities management.

Co-Founder and Board Member

The Most Maiorum

📅 Oct 2018 – Sep 2021

📍 Pavia, Italy

- Independently organized cultural and charity events with hundreds of spectators.