Piersilvio De Bartolomeis

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8006 Zurich
🌐 *Personal Website*
🎓 *Google Scholar*

Education

2023–PRESENT   **Ph.D. in Computer Science**, *ETH Zurich, Switzerland*
- Main advisor: Prof. Fanny Yang
- Second advisor: Prof. Jonas Peters
- Research interests: causal inference, treatment effect estimation, data fusion

2020–2022   **M.Sc. in Data Science cum laude**, *ETH Zurich, Switzerland*
- Thesis: "How robust accuracy suffers from certified training with convex relaxations"
- Advisors: Prof. Fanny Yang and Prof. Amartya Sanyal
- Selected courses: Causality, Statistical Learning Theory, Reinforcement Learning

2017–2020   **B.Sc. in Computer Engineering cum laude**, *Politecnico di Milano, Italy*
- Selected courses: Probability Theory, Mathematical Analysis, Linear Algebra

Research Experience

2024   **Visiting Graduate Student**, *Harvard University*, United States
- Hosted by Prof. Issa Dahabreh and part of the CAUSALab

2021   **Research Intern**, *ETH Zurich*, Switzerland
- Hosted by Prof. Cara Magnabosco and part of the Geobiology group
- Project: Machine learning methods for the identification of protein secretion systems

2019   **Visiting Student**, *Hong Kong University of Science and Technology*, China
- Hosted by Prof. Gary Chan
- Project: Machine learning methods for accurate indoor localization

Publications

[1] Rickard Karlsson, Guanbo Wang, **Piersilvio De Bartolomeis**, Jesse H Krijthe, and Issa J Dahabreh. "Robust integration of external control data in randomized trials". *Biometrics* (2025, forthcoming).

[2] **Piersilvio De Bartolomeis**, Julia Kostin, Javier Abad, Yixin Wang, and Fanny Yang. "Doubly robust identification of treatment effects from multiple environments". *International Conference on Learning Representations* (2025). [PDF]

[3] **Piersilvio De Bartolomeis**, Javier Abad, Konstantin Donhauser, and Fanny Yang. "Detecting critical treatment effect bias in small subgroups". *Conference on Uncertainty in Artificial Intelligence* (2024). [ARXIV]

[4] **Piersilvio De Bartolomeis**, Javier Abad, Konstantin Donhauser, and Fanny Yang. "Hidden yet quantifiable: A lower bound for confounding strength using randomized trials". *International Conference on Artificial Intelligence and Statistics* (2024). [ARXIV]

[5] Mirco Mutti, Riccardo De Santi, **Piersilvio De Bartolomeis**, and Marcello Restelli. "Convex Reinforcement Learning in Finite Trials". *Journal of Machine Learning Research* (2023). [PDF]

[6] Mirco Mutti, Riccardo De Santi, **Piersilvio De Bartolomeis**, and Marcello Restelli. "Challenging Common Assumptions in Convex Reinforcement Learning". *Advances in Neural Information Processing Systems 35* (2022). [ARXIV]

Scholarships and awards

2023 **Ermenegildo Zegna Founder's Scholarship**, *Fondazione Zegna*, Italy
Scholarship of $6000 awarded to Italian students visiting a leading institution abroad

2019-2020 **Merit Scholarship**, *Politecnico di Milano*, Italy
Full scholarship covering tuition and living expenses

2018 **Best Freshmen Award**, *Politecnico di Milano*, Italy
Prize of $1500 awarded to the best freshmen at Politecnico di Milano

Contributed Talks

2023 **Workshop on Machine Learning for Healthcare**, *organized by Prescient Design and ETH AI Center*, Zurich, Switzerland
Talk title: "Hidden yet quantifiable: a lower bound for confounding strength using randomized trials"

2022 **Workshop on Understanding Deep Learning Through Empirical Falsification**, *organized at NeurIPS*, New Orleans, United States
Talk title: "Certified defences hurt generalisation"

Teaching Experience

2023–PRESENT **Introduction to Machine Learning (1000+ students)**, *ETH Zurich*, Switzerland
○ Instructors: Prof. Andreas Krause and Prof. Fanny Yang
○ Designed homework assignments, exam questions, and tutorial lectures

2021–2022 **Machine Learning for Geobiology**, *ETH Zurich*, Switzerland
○ Instructor: Prof. Cara Magnabosco
○ Designed homework assignments and a Kaggle competition for the final course project

2020 AND 2023 **Advanced Machine Learning**, *ETH Zurich*, Switzerland
○ Instructors: Prof. Joachim Buhmann and Dr. Carlos Cotrini
○ Designed lecture notes, homework assignments and tutorial lectures

Volounteering

2023–PRESENT **Speaker Curator**, *TEDxBattipaglia*
Organizing the first TEDx event in my hometown, bringing together high-level Italian speakers to share their ideas and insights with the local community

2023–PRESENT **Mentor**, *LeadTheFuture*

LeadTheFuture is a non-profit mentoring organization and the largest merit-based STEM community in Italy. Currently, it counts more than 150 mentors, including researchers and entrepreneurs, and 500 selected mentees