Alessandro Pinzi

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https://alessandropinzi.github.io/

Research interest

- My interests lie between optimal transport and non-smooth geometry. In particular, I am interested in many problems from evolution of measures: non-local continuity equations; gradient flows in metric spaces; Wasserstein gradient flow and its applications to problems from both statistics and machine learning.

Education

Sep 2022 – pres. — **Ph.D. in Statistics and Computer Science, Bocconi University, Milan**
Advisors: *Prof. Giuseppe Savaré and Prof. Dario Trevisan*

Oct 2019 – May 2022 — **M.Sc. Mathematics, Università di Pisa, Pisa**
Thesis: *Optimal maps in metric measure spaces with Ricci curvature bounded from below*
Supervisor: *Prof. Luigi Ambrosio*
Final grade: *110/110 cum laude*

Sep 2016 – Oct 2019 — **B.Sc. Mathematics, Università di Pisa, Pisa**
Thesis: *Random optimal transport problems: two and three marginal distributions*
Supervisor: *Prof. Dario Trevisan*
Final grade: *110/110 cum laude*

Teaching

Università di Pisa

2019 — **Counselling**: orientation for University of Pisa, aimed to high school students.

2020-2022 — **Tutoring**: tutor for first year students in 2020; tutor for the bachelor course 'Analisi Matematica 1' in 2020/2021; tutor for the master course 'Istituzioni di Analisi Matematica' in 2021/2022.

Bocconi University

2023-2024 — **TA**: 'Mathematical Analysis 1' (BAI), 'Probability 1' (BAI), 'Elements of Real and Fourier Analysis' (BAI).

2024-2025 — **TA**: 'Mathematical Analysis 1' (BAI), 'Probability' (BAI), 'Mathematical Analysis 2' (BAI), 'Machine Learning (Introduction)' (BIG).
Instructor: 'Probability' (BAI), 'Machine Learning (Introduction)' (BIG).

2025-2026 — **TA**: 'Mathematical Analysis 1' (BAI), 'Algebraic and topological methods' (BAI).
Instructor: 'Probability' (BAI).

Publications

Preprints

- *Totally convex functions, L^2-Optimal transport for laws of random measures, and solution to the Monge problem* - A.P. and Giuseppe Savaré, https://arxiv.org/abs/2509.01768, 2025
- *Nested superposition principle for random measures and the geometry of the Wasserstein on Wasserstein space* - A.P. and Giuseppe Savaré, 2025, https://arxiv.org/abs/2510.07523
- *First order equation on random measures as superposition of weak solutions to the McKean-Vlasov equation* - A.P., 2025, https://arxiv.org/abs/2510.07542
- *A study of the metric measure space of probability measures via a purely atomic superposition principle* - A.P., 2025, https://arxiv.org/abs/2511.21204

In preparation

- *A variational principle for doubly nonlinear equations: convexification in spaces of measures and duality* - A.P., Filippo Riva and Giuseppe Savaré

Talks

Invited seminars

28 Nov 2024, Pisa
- *Continuity equation on random measures and a new superposition principle for the non-local case*. "MAP seminars", University of Pisa. (Invited by Dr. Leonardo Roveri)

03 Dec 2025, Bielefeld
- *Superposition principles on random measures and applications*. "Bielefeld stochastic afternoon", University of Bielefeld. (Invited by Prof. Michael Röckner)

08 Jan 2026, Graz
- *L^2-optimal transport for random measures and solution to the Monge problem*. "Probability and Statistics seminars", TU Graz. (Invited by Dr. Gudmund Pammer)

Contributed talks

26 Jan 2025, Folgarida
- *Nested superposition principle: from the continuity equation on random measures to interacting particle systems*. Given at the DolomitesWS25: https://sites.google.com/view/dolomitesws25

13 Oct 2025, Lausanne
- *On the geometry of (laws of) random measures*. Given at the OTMG2025: https://sites.google.com/view/otmg2025/home (registration available)

Poster sessions

24-28 Jul 2023, UK
- *On dynamic Schrödinger bridge and link to the Wasserstein gradient flow of the Fisher information*. Presented at the ImperialCollege-Oxford-Bocconi StatML summer school: https://statml.io/index.php/statml-cdt-summer-school-july-2023/

9-13 Jun 2025, Como
- *Evolution of random measures and non-local continuity equation*. Presented at the summer school "Mathematical Analysis and Applications": https://mmaa.lakecomoschool.org/

Skills

Languages	Italian: mother tongue English: fluent
Coding	LaTeX: excellent Matlab, Python: good Julia: basic