

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 currently working on the following areas: PDEs for random probability measures; gradient flows in metric spaces; Wasserstein gradient flow. I am also interested in possible 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>
- *A direct method for doubly nonlinear equations via convexification in spaces of measures and duality* - A.P., Filippo Riva and Giuseppe Savaré, 2026, <https://arxiv.org/abs/2602.09808>

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)

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)
- 9-13 Feb 2026, Riccione ■ *Esistenza di flussi gradienti in spazi di Banach tramite convessificazione nello spazio delle probabilità.* To be given at the XXXV Italian National Conference on Calculus of Variations: <https://sites.google.com/uniroma1.it/cncdv2026/home-page> (slides available)

Poster sessions

- 24-28 Jul 2023, UK ■ *On dynamic Schrödinger bridge and link to the Wasserstein gradient flow of the Fisher information.* “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