

# 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>

## Talks

### Invited seminars

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|------------------------|--|
| 28 Nov 2024, Pisa      | ■ <i>Continuity equation on random measures and a new superposition principle for the non-local case.</i> “MAP seminars”, University of Pisa. (Invited by Dr. Leonardo Roveri) |
| 03 Dec 2025, Bielefeld | ■ <i>Superposition principles on random measures and applications.</i> “Bielefeld stochastic afternoon”, University of Bielefeld. (Invited by Prof. Michael Röckner)           |

### Contributed talks

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|------------------------|---|
| 26 Jan 2025, Folgarida | ■ <i>Nested superposition principle: from the continuity equation on random measures to interacting particle systems.</i> Given at the DolomitesWS25: <a href="https://sites.google.com/view/dolomitesws25">https://sites.google.com/view/dolomitesws25</a> |
| 13 Oct 2025, Lausanne  | ■ <i>On the geometry of (laws of) random measures.</i> Given at the OTMG2025: <a href="https://sites.google.com/view/otmg2025/home">https://sites.google.com/view/otmg2025/home</a> (registration available)  |

### Poster sessions

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|---------------------|---|
| 24-28 Jul 2023, UK  | ■ <i>On dynamic Schrödinger bridge and link to the Wasserstein gradient flow of the Fisher information.</i> Presented at the ImperialCollege-Oxford-Bocconi StatML summer school: <a href="https://statml.io/index.php/statml-cdt-summer-school-july-2023/">https://statml.io/index.php/statml-cdt-summer-school-july-2023/</a> |
| 9-13 Jun 2025, Como | ■ <i>Evolution of random measures and non-local continuity equation.</i> Presented at the summer school "Mathematical Analysis and Applications": <a href="https://mmaa.lakecomoschool.org/">https://mmaa.lakecomoschool.org/</a>   |

## Skills

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| Languages | ■ Italian: mother tongue<br>English: fluent                    |
| Coding    | ■ $\LaTeX$ : excellent<br>Matlab, Python: good<br>Julia: basic |