

# Alessandro Pinzi

✉ alessandro.pinzi@phd.unibocconi.it  
🌐 <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

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| Sep 2022 – pres.    | ■ <b>Ph.D. in Statistics and Computer Science, Bocconi University, Milan</b><br>Advisors: Prof. Giuseppe Savaré and Prof. Dario Trevisan                                                                                   |
| Oct 2019 – May 2022 | ■ <b>M.Sc. Mathematics, Università di Pisa, Pisa</b><br>Thesis: <i>Optimal maps in metric measure spaces with Ricci curvature bounded from below</i><br>Supervisor: Prof. Luigi Ambrosio<br>Final grade: 110/110 cum laude |
| Sep 2016 – Oct 2019 | ■ <b>B.Sc. Mathematics, Università di Pisa, Pisa</b><br>Thesis: <i>Random optimal transport problems: two and three marginal distributions</i><br>Supervisor: Prof. Dario Trevisan<br>Final grade: 110/110 cum laude       |

## Teaching

### Università di Pisa

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| 2019      | ■ <b>Counselling:</b> orientation for University of Pisa, aimed to high school students.                                                                                                                   |
| 2020-2022 | ■ <b>Tutoring:</b> 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

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| 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).<br><b>Instructor:</b> ‘Probability’ (BAI), ‘Machine Learning (Introduction)’ (BIG). |
| 2025-2026 | ■ TA: ‘Mathematical Analysis 1’ (BAI), ‘Algebraic and topological methods’ (BAI).<br><b>Instructor:</b> ‘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

- 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)

## 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.lakecosmoschool.org/>

# Skills

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| Languages | ■ Italian: mother tongue<br>English: fluent                                          |
| Coding    | ■ L <sup>A</sup> T <sub>E</sub> X: excellent<br>Matlab, Python: good<br>Julia: basic |