

# LUCAS PESENTI

## EDUCATION

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### Ph.D. in Statistics and Computer Science

since 2021

*Bocconi University, Milan*

- Thesis: “Beyond the union bound: discrepancy, optimization, certification”
- Advised by Luca Trevisan (until June 2024), Laura Sanità and Pravesh Kothari (since June 2024).

### B.Sc. and M.Sc. in Computer Science

2016 – 2021

*École Normale Supérieure de Paris (ENS Ulm)*

- Parisian Master of Research in Computer Science obtained with the highest honors (rank 1/65).
- Student and civil servant at ENS with a major in computer science and a minor in mathematics.
- Ranked 1st at the ENS entrance exam (computer science section).

## PREPRINTS AND PUBLICATIONS

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[1] *Fourier analysis of iterative algorithms*, with Chris Jones.

[2] *On the second eigenvalue of random sparse hypergraphs*, with Luca Trevisan.

[3] *New SDP roundings and certifiable approximation for cubic optimization*, with Jun-Ting Hsieh, Pravesh K. Kothari, and Luca Trevisan.

appeared in Proceedings of the Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2024).

[4] *Discrepancy minimization via regularization*, with Adrian Vladu.

appeared in Proceedings of the Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2023).

## TEACHING ASSISTANTSHIP

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20874 – Algorithms for Optimization and Inference

Fall 2023, Fall 2024

20873 – Analysis of Algorithms and Data Structures

Fall 2023, Fall 2024

30540 – Computing Theory and Algorithms

Spring 2022, Spring 2023

Algorithms

Spring 2022

## RESEARCH VISITS

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Princeton University (Pravesh Kothari)

Jan. – May 2025

Johns Hopkins University (Tim Kunisky)

Apr. 2025

ETH Zürich (David Steurer, Afonso Bandeira)

Oct. 2024

University of Pennsylvania (Anindya De)

Jan. – Feb. 2024

Simons Institute – University of California, Berkeley

Jul. 2023

Paris Diderot University (Adrian Vladu)

Feb. – Jul. 2021, Jul. 2023, Oct. 2024

Bocconi University (Luca Trevisan)

Sep. – Dec. 2020

TU Eindhoven (Nikhil Bansal)

Feb. – Jun. 2018

## SELECTED COMMUNICATIONS

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<i>Fourier analysis of random optimization problems</i> Johns Hopkins University.	Apr. 2025
<i>On maximizing polynomials</i> Workshop in memory of Luca Trevisan (1971-2024), Bocconi University.	Dec. 2024
<i>Understanding iterative algorithms with Fourier diagrams</i> DACO seminar, ETH Zürich.	Oct. 2024
<i>Diagram analysis of iterative algorithms</i> Roccella Conference on Inference and AI (poster presentation).	Sep. 2024
<i>Up to the constant: Spencer's theorem and random matrices</i> Computer science seminar, University of Pennsylvania.	Feb. 2024
<i>New SDP roundings and certifiable approximation for cubic optimization</i> Symposium on Discrete Algorithms (SODA 2024), Washington DC.	Jan. 2024
<i>Discrepancy minimization via regularization</i> Symposium on Discrete Algorithms (SODA 2023), Florence.	Jan. 2023

## SERVICE

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Reviewing for Symposium on Foundations of Computer Science (FOCS), Symposium on Theory of Computing (STOC), Symposium on Discrete Algorithms (SODA), SIAM Journal on Computing (SICOMP), Journal of the ACM (JACM), Mathematical Statistics and Learning.	
Ph.D. representative	2022 – 2025
Organization of the theoretical computer science reading group	2021 – 2023

## EXTRA-ACADEMIC ACHIEVEMENTS

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Bronze medals in the ACM-ICPC Southwestern European contest.	2016, 2017
Bronze medal in the International Olympiad in Informatics (IOI, Taipei)	2014
Ranked 1st in the national IOI selection	2013 – 2014