

LUCAS PESENTI

EDUCATION

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

[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

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

Princeton University (Pravesh Kothari)

Jan. – May 2025

Johns Hopkins University (Tim Kunisky)

planned Mar. 2025

ETH Zürich (David Steurer, Afonso Bandeira)

Oct. 2024

EPFL (Florent Krzakala)

Sep. 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

On maximizing polynomials

Dec. 2024

Workshop in memory of Luca Trevisan (1971-2024), Bocconi University.

Understanding iterative algorithms with Fourier diagrams

Oct. 2024

DACO seminar, ETH Zürich.

Diagram analysis of iterative algorithms

Sep. 2024

Roccella Conference on Inference and AI (poster presentation).

Up to the constant: Spencer's theorem and random matrices

Feb. 2024

Computer science seminar, University of Pennsylvania.

New SDP roundings and certifiable approximation for cubic optimization

Jan. 2024

Symposium on Discrete Algorithms (SODA 2024), Washington DC.

Discrepancy minimization via regularization

Jan. 2023

Symposium on Discrete Algorithms (SODA 2023), Florence.

SERVICE

Reviewing for 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

since 2022

Organization of the theoretical computer science reading group

2021 – 2023

EXTRA-ACADEMIC ACHIEVEMENTS

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