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.
in Proceedings of the International Colloquium on Automata, Languages and Programming (ICALP 2025).

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

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

Fourier analysis of random optimization problems Apr. 2025
Johns Hopkins University.

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 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

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