

SIMONE BOMBARI

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EDUCATION

Institute of Science and Technology Austria · PhD student PhD advisor: Marco Mondelli	2020 - current
Scuola Normale Superiore · Professional master program in physics Final grade: 100/100 <i>cum laude</i>	2015 - 2020
University of Pisa · M.Sc. in physics Final grade: 110/110 <i>cum laude</i>	2018 - 2020
University of Pisa · B.Sc. in physics Final grade: 110/110 <i>cum laude</i>	2015 - 2018

ACADEMIC VISITS AND INTERNSHIPS

University of Southern California · Visiting scholar Hosts: Yizhe Zhu and Mahdi Soltanolkotabi	2025
G Research · Quant NLP researcher intern	2023
Amazon Web Services · Applied scientist intern	2021-2022
University of California Los Angeles · Visiting graduate researcher Host: Stefano Soatto	2020
Complex Science Hub · Research Intern	2018

SELECTED FELLOWSHIPS AND AWARDS

ICLR SCSL workshop best paper award	2025
Google PhD fellowship in machine intelligence	2024
ICML best reviewer award	2024
International physics olympiad · Silver medal	2015

SELECTED PUBLICATIONS AND PREPRINTS

A Law of Data Reconstruction for Random Features (and Beyond)
Leonardo Iurada*, Simone Bombari*, Tatiana Tommasi, and Marco Mondelli. *arXiv preprint*

Better Rates for Private Linear Regression in the Proportional Regime via Aggressive Clipping
Simone Bombari, Inbar Seroussi, and Marco Mondelli. *arXiv preprint*

Privacy for Free in the Overparameterized Regime
Simone Bombari and Marco Mondelli. *PNAS*, 2025
contributed talk at DeepMath 2024

Spurious Correlations in High Dimensional Regression: The Roles of Regularization, Simplicity Bias and Over-Parameterization
Simone Bombari and Marco Mondelli. *ICML 2025*
best paper award at ICLR SCSL workshop 2025

**Towards understanding the word sensitivity of attention layers:
a study via random features**

Simone Bombari and Marco Mondelli. *ICML 2024*

How Spurious Features are Memorized: Precise Analysis for Random and NTK Features.

Simone Bombari and Marco Mondelli. *ICML 2024*

**Beyond the universal law of robustness: sharper laws for random features
and neural tangent kernels.**

Simone Bombari, Shayan Kiyani, and Marco Mondelli. *ICML 2023*
selected as oral

**Memorization and optimization in deep neural networks
with minimum over-parameterization.**

Simone Bombari, Mohammad Hossein Amani, and Marco Mondelli. *NeurIPS 2022*
contributed talk at DeepMath 2022

TEACHING

ISTA deep learning theory course · Teaching and TA 2025

ISTA data science and scientific computing track core course · TA 2023, 2024

TALKS

Combinatorics and probability seminar UCI 2025

MINDS seminar UCSD 2025

Probability and statistics seminar USC 2025

European Young Statisticians Meeting 2025

Youth in High-Dimension 2025

Applied math colloquium UCLA 2025

Probability seminar university of Bucharest 2024

Contributed talk at DeepMath 2024

ICML oral presentation 2023

UCLA-MPI MathML Seminar 2023

Austrian Computer Science Day 2023

Contributed talk at DeepMath 2022

MISCELLANEA

Reviewing service

NeurIPS, ICML, ICLR, AISTATS, TMLR, ISIT, Applied and Computational Harmonic Analysis,
Information and Inference: A Journal of the IMA, IEEE Transactions on Information Theory

ICLR volunteer 2024

ISTA young scientists symposium · Organizer and fundraiser 2023

International mathematical games - HC · 5th position 2017

SOCIAL

Personal website · Scholar · LinkedIn · X · GitHub