

SIMONE BOMBARI

simone (dot) bombari [at] nyu (dot) edu

EDUCATION

Institute of Science and Technology Austria · PhD PhD advisor: Marco Mondelli	2020 - 2026
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

EMPLOYMENT AND AFFILIATIONS

New York University · CDS Faculty Fellow	2026 - current
Flatiron Institute · CCM Research Fellow	2026 - current
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 AWARDS AND DISTINCTIONS

ICLR SCSL workshop best paper award	2025
Google PhD fellowship in machine intelligence	2024
ICML best reviewer award	2024
Silver medal at the international physics olympiads	2015

SELECTED PUBLICATIONS AND PREPRINTS

A Sharp Transition in Data Reconstruction under Differential Privacy Max Cairney-Leeming, Simone Bombari, and Marco Mondelli. <i>arXiv preprint</i>
High-Dimensional Private Linear Regression with Optimal Rates Simone Bombari, Jialei Luo, Inbar Seroussi, and Marco Mondelli. <i>arXiv preprint</i>
Contributed talk at EurIPS PPML workshop 2025
A Law of Data Reconstruction for Random Features (and Beyond) Leonardo Iurada*, Simone Bombari*, Tatiana Tommasi, and Marco Mondelli. <i>ICLR 2026</i>
Privacy for Free in the Overparameterized Regime Simone Bombari and Marco Mondelli. <i>PNAS, 2025</i>
Contributed talk at DeepMath 2024 and MML 2025

**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

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
Organizer and fundraiser for the ISTA young scientists symposium	2023
5th position at the international mathematical games - HC	2017

SOCIAL

Personal website · Scholar · LinkedIn · X · GitHub