

SIMONE MARIA GIANCOLA

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EDUCATION

Université Paris-Saclay, Orsay institute of mathematics (IMO) <i>M2 probability and statistics</i>	2024 – 2025 <i>Orsay, FRA</i>
Bocconi University <i>MS data science</i>	2021 – 2024 <i>Milan, ITA</i>
Arizona State University <i>Undergraduate exchange</i>	2021 <i>Phoenix, USA</i>
Bocconi University <i>BS economics, management and computer science</i>	2018 - 2021 <i>Milan, ITA</i>

EXPERIENCE

PhD student <i>Orsay institute of mathematics (IMO)</i> <ul style="list-style-type: none">Advisors: prof. Giraud, DR Verzellen (INRAE Montpellier)Statistical to computational gaps, low-degree method, statistical physics	Nov 2025 - present <i>Orsay, FRA</i>
Research intern <i>Orsay institute of mathematics (IMO)</i> <ul style="list-style-type: none">Advisors: prof. Giraud, DR Verzellen (INRAE Montpellier), prof. Carpentier (Potsdam)Statistical to computational gaps, low-degree method, graph theory	Apr 2025 - July 2025 <i>Orsay, FRA</i>
Research intern <i>King Abdullah University of Science and Technology (KAUST)</i> <ul style="list-style-type: none">Advisor: prof. RichtárikOptimization, conditioned gradient descent methods, machine learning	Feb 2024 - May 2024 <i>Jeddah, KSA</i>
Research intern <i>École Normale Supérieure (ENS)</i> <ul style="list-style-type: none">Advisor: CR LoureiroNeural network theory, stochastic gradient descent, gradient flow	Oct 2023 - Dec 2023 <i>Paris, FRA</i>
Research intern <i>Institute of Science and Technology Austria (ISTA)</i> <ul style="list-style-type: none">Advisor: prof. MondelliStatistical to computational gaps, information theory, message passing algorithms	Jun 2023 - Aug 2023 <i>Wien, AUT</i>

ISTernship summer programme, ref. num. MPC-2023-01128, financed by ISTA, awarded by the OeAD

PAPERS

Richtárik, Giancola, Lubczyk, and Yadav. *Local curvature descent: squeezing more curvature out of standard and Polyak gradient descent*. In: NeurIPS OPT24 workshop, 2024. arXiv: [2405.16574](https://arxiv.org/abs/2405.16574) [math.OC].

TALKS

Stochastic gradient descent methods <i>Local curvature descent</i>	2024 <i>KAUST</i>
Séminaire des doctorants <i>Information-theoretic and algorithmic limits of mixed linear regression</i>	2023 <i>ENS Paris</i>
Group seminar <i>Information-theoretic and algorithmic limits of mixed linear regression</i>	2023 <i>IST Austria</i>

TEACHING

Analysis <i>Teaching assistant, R209</i>	2026 <i>IUT Orsay</i>
Graph theory <i>Teaching assistant, R207</i>	2026 <i>IUT Orsay</i>

DISTINCTIONS

Selected for the 12th Heidelberg laureate forum (HLF).

Scholarships: OeAD Austria; first Italian school in geometric deep learning.

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SERVICE

Reviewer NeurIPS 2024, ICLR 2025.

Mentor Prison math project (PMP).

SKILLS

Advanced Python, \LaTeX ;

Basic Julia, Git, Unix, R, SQL, Matlab, C++, Keras, TensorFlow.

LANGUAGES

English (proficient); Italian (native); French (intermediate); Spanish (basic).

PROFILE & INTERESTS

Motivated researcher with a background in statistics, computer science, and probability. Passionate about the interplay of rigorous research and insights from physics. In my spare time, I enjoy rugby, motorbike trips, podcasts, reading, and running.