Edgar Desainte-Maréville

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Experience

PhD student *Lyon, France*
ENS Lyon, Inria OCKHAM team *Nov. 2024 – Present*

- Supervisors: Elisa Riccietti, Paulo Gonçalves and Nelly Pustelnik.
- Second order and learning-based multilevel methods for solving inverse problems.

Research Intern *Genoa, Italy*
MaLGa, University of Genoa *Apr. 2024 – Sept. 2024*

- Supervisors: Matteo Santacesaria and Giovanni S. Alberti.
- Continuous generative models using pseudo-differential operators within variational autoencoders.

Education

Ecole Centrale de Lyon *2020 – 2024*
Engineering degree, specialization in Applied Mathematics

- Relevant courses: Theoretical and numerical study of partial differential equations, probabilities, statistics, applications of PDEs to environmental science.
- Project: Mathematical study of a flow in a porous medium, under the supervision of Matthieu Bonnivard.

Université Lyon 1 *2023 – 2024*
Maths en Action Master's in applied mathematics

Relevant courses: Fluid mechanics equations, ecological graphs and networks, statistics for climate risk modeling, optimal transport.

Teaching

INSA Lyon *2024 – 2025*

- First-year of Master's in electrical engineering: Introduction to probability and statistics - lectures and tutorials *(in French)*.
- Second year of the Bachelor's degree in Engineering: Mathematics - numerical series, power series, bilinear algebra - tutorials *(in English)*.

Lycée du Parc, Lyon *2023 – 2024*

Oral exams in mathematics (*colles*) for second-year students in the MP preparatory class.

Publications

A multilevel approach to accelerate the training of Transformers Apr. 2025
Guillaume Lauga, Maël Chaumette, Edgar Desainte-Maréville, Arthur Lebeurrier, Etienne Lasalle.
Accepted at GRETSI 2025. https://arxiv.org/abs/2504.18590

Technologies

Languages: French (native), English (fluent), Italian (intermediate), Spanish (intermediate).

Programming: Python (PyTorch), Matlab, Git.