Rennes, France

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Personnal website
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Raphaël LECOQ

RESEARCH STUDENT IN MATHEMATICS AND THEORETICAL PHYSICS

I am a trainee civil servant at **Ecole Normale Supérieure de Rennes**, which provides me with a comprehensive education in mathematics and theoretical physics. I aim to specialize in the mathematics of modelisation and simulation during my 2nd year of MSc, and to pursue a PhD in any related field.

EDUCATION

2023-Ongoing Rennes, France	MSc of fundamental and applied Mathematics, Bachelor of Physics ***ENS Rennes***
2022-2023 Rennes, France	Bachelor of fundamental and applied Mathematics ***ENS Rennes***
2019-2022 Tours, France	CPGE Mathematics and Physics ***Lycée Descartes***

RELEVANT COURSEWORK

- Functionnal, Numerical analysis
- Machine learning
- Stochastic modeling
- Partial Differential Equations
- Numerical solving of PDEs
- Quantum physic
- Statistical physic
- Continuum mechanics

WORK EXPERIENCES

May–August 2024 (Pisa, Italy)	**Institute of Biorobotics, Sant'Anna Scuola Superiore | Research Internship** • <u>Implementation of a posteriori error estimators and indicators for FV-based reduced-order models in computational fluid dynamics.</u>, supervised by Giovanni STABILE. Project DANTE, ERC Grant
May-July 2023 (Saclay, France)	**LPTMS, CNRS | Research Internship** • <u>Statistical analysis of critical branching stochastic processes</u>, supervised by Alberto ROSSO. Numerical modelling and data analysis with Python. Collaboration with CEA involving weekly reports.
May 2023 (Angers, France)	**Chevrollier Highschool | Maths Teacher** • Teaching maths in highschool, supervised by a permanent maths teacher. 2nd Générale Européenne, Tale Maths Expertes, CPGE ECT, CPGE PTSI
Summer 2016-2022	**Summer jobs | Institut de Cancérologie de l'Ouest / Ferme CHAILLOUX** Cleaning Unit, Warehouseman, Data analysis and processing for the archives / Farm work

PROJECTS

2024	**General solutions of Schrödinger's equation** **Approximation spaces of deep neural networks**
2023	**Classical methods for solving linear and non linear PDEs** • Research in pair under the guidance of a PhD candidate at INRIA.
2022	**TIPE : Data augmentation through Generative Adversarial Networks**
2021	**TIPE : Spatial optimization of storage spaces using numerical simulations**

TECHNICAL SKILLS

- French C2
- English C1 (TOEIC 955/990)
- Basic knowledge of German and Italian

- Python : Sklearn, Panda, Pytorch, Numpy
- SQL, Matlab, Ocaml, Sage

- Autonomous
- Fast learner
- Critical thinking
- Teamworking

MISCELLANEOUS

2023-24	Tutor for CPEnS Bachelors Maths and Physics private teacher at Complétude Student Council sponsorship and events advisor
2022-23	Tutor for CPEnS Bachelors Communication for Rendez-vous des Jeunes Mathématiciennes et Informaticiennes at ENS Rennes

Interests :
- Table tennis
- Motorbikes
- Wakeboard
- Photography
- Clarinet for student orchestra