Louis Tocquec

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LinkedIn

EDUCATION

PhD in applied mathematics **2024-present**
Université Paris-Saclay and INRIA *Orsay, France*
- Thesis: *Entropic Optimal Transport and some generalizations*
- Advisors: *Luca Nenna (Univ. Paris-Saclay) and Paul Pegon (Univ. Paris-Dauphine)*
- Univ. Paris-Saclay: *LMO, team ANEDP*
- INRIA: *Mokaplan and Parma*

M.sc. in applied mathematics *Mathématiques, Vision, Apprentissage* **2023-2024**
École Normale Supérieure Paris-Saclay *Gif-sur-Yvette, France*
- Relevant coursework: *convex optimization, statistical learning, optimal transport, kernel methods for ML, graph in ML, sequential learning*

M.sc. in applied mathematics (1st year): *advanced mathematics track* **2022-2023**
Université Paris-Dauphine *Paris, France*
- Relevant coursework: *functional analysis, Brownian motion and contingent asset valuation, discrete processes, continuous processes, control of Markov chains, Monte-Carlo methods, optimization, non-parametric statistics, statistical learning, convex analysis*
- English track: *additional english course, tutorials in english*

B.Sc. in applied mathematics: *advanced mathematics track* **2019-2022**
Université Paris-Dauphine *Paris, France*
- Relevant coursework: *analysis, measure theory, functional analysis, differential equations, optimization and numerical methods, probabilities, statistics, linear algebra, group theory, game theory, complex analysis, microeconomics, macroeconomics, finance*

Scientific baccalauréat **2019**
Lycée Saint-Joseph *Concarneau, France*

EXPERIENCE

Research internship **2024**
Laboratoire de Mathématiques d'Orsay, INRIA MOKAPLAN *Orsay, France*
- Thesis: *ODE characterization of entropic optimal transport*
- Advisors: *Luca Nenna (Univ. Paris-Saclay) and Paul Pegon (Univ. Paris-Dauphine)*

PUBLICATIONS

Preprint
- *Convergence rates of unbalanced optimal transport: the discrete case*, joint work with L. Nenna and P. Pegon, arXiv:2507.07917

CONFERENCES AND SEMINARS

Speaker
- Mokameeting: *ODE characterization of entropic optimal transport* **2024**
- MoKarMa day: *Convergence rates of unbalanced optimal transport: the discrete case* **2025**

Participant
- Festum'Pi: *summer school on analysis, Chania* **2024**
- Conference on optimal transport and applications: *Pisa*
- Mokameeting **2024-2025**
- GT CalVA
- GT ODE-PDE-ML

TEACHING EXPERIENCE

Université Paris-Saclay

- Calcul numérique : TP, L2 Maths, 12h **2025**
- Équations différentielles : TD, L2 Physique, 24h
- Calcul numérique : TP, L2 Maths, 24h **2026**
- Introduction à Python : TP, L1 Maths, 24h

RESEARCH VISITS

- University of Alberta, Edmonton, with Pr. Brendan Pass, 07/06-21/06 **2025**

PROJECTS

M1 thesis: *"First passage percolation"* **2022-2023**

- Advisor: Pierre Cardaliaguet (CEREMADE)

Geometric Data Analysis **2023**

- Review of the research paper "Wasserstein-based Graph Alignment"
- Numerical implementations using Python

Probabilistic Graphical Models **2023**

- Review of the research paper "Are Generative Classifiers More Robust to Adversarial Attacks?"
- Numerical implementations using Python

Learning and Generation by Probability Sampling **2024**

- Data challenge ENS: "CorroSeg" by SLB
- Implementation of a model to predict pipe corrosion

Kernel Methods for Machine Learning 2024

- Implementation of a model which relies on kernel methods for image classification

SKILLS, ACTIVITIES & INTERESTS

Languages:

- French: native speaker
- English: fluent (TOEIC: 870)
- Spanish: beginner (High school)

Technical Skills:

- Python: good command
- LaTeX: good command
- R: basic knowledge

Software: Excel, Overleaf, Google Colab, RStudio, Anaconda

Activities: guitar, football, running, tennis