Alex Delalande

Ph.D. candidate in Applied Mathematics at Université Paris-Sud and INRIA

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Education

Dec. 2019–Present	**Ph.D. in Applied Mathematics**, *Université Paris-Sud & INRIA*, France. Thesis title: *Measure embedding with Optimal Transport and applications in Machine Learning.* Under the supervision of Quentin Mérigot (Laboratoire de Mathématiques d'Orsay) and Frédéric Chazal (INRIA DataShape team).
2018–2019	**M.Sc. MVA "Mathematics, Vision and Learning"**, *ENS Paris-Saclay*, France, GPA: 17.3/20, Highest honors.
2015–2019	**Diplôme d'ingénieur**, *École Centrale Paris (now CentraleSupélec)*, France, Majoring in Applied Mathematics. - GPA: 4.0/4.3.

Publications

2021	**Nearly Tight Convergence Bounds for Semi-discrete Entropic Optimal Transport**, A. Delalande. *AISTATS 2022.*
2021	**Quantitative Stability of Optimal Transport Maps under Variations of the Target Measure**, A. Delalande, Q. Mérigot. *Preprint.*
2019	**Quantitative Stability of Optimal Transport Maps and Linearization of the 2-Wasserstein Space**, Q. Mérigot, A. Delalande, F. Chazal. *AISTATS 2020.*

Talks and Poster Presentations

Nov. 2021	*GT Transport Optimal*, Orsay, France.
Nov. 2021	*Workshop on Schrödinger Problem and Mean-field PDE Systems: Computational and Theoretical Advances*, CIRM, Marseille, France.
June 2021	*PhD days in Analysis*, Orsay, France.
Aug. 2020	*AISTATS 2020*, Online.
Dec. 2019	*NeurIPS 2019 "Optimal Transport and Machine Learning" Workshop*, Vancouver, Canada.
Nov. 2019	**DataShape team seminar**, Porquerolles, France.

Reviewing

- AISTATS (2022)
- SIAM Journal on Imaging Sciences (SIIMS)
- Information and Inference: A Journal of the IMA

Teaching assistantships

2020-2022	**Université Paris-Saclay**.
	- Statistical inference (MEU354 - L3)
	- Numerical Analysis with Python (MDD253/MEU255 - L2)
	- Ecology and Statistics (EcoStats - L2)
	- Statistical testing in Biology (Math291 - L2)

| Spring 2020 | **CentraleSupélec**. |
| | ○ Optimization (2CC3000 - M1) |

Research experience

| May 2019 – Nov. 2019 | **Research internship - Optimal Transport**, *INRIA Saclay, DataShape team*, France. Hilbert space embedding of (discrete) measures with optimal transport maps. *Supervisors:* Frédéric Chazal and Quentin Mérigot |
| Feb. 2018 – Jul. 2018 | **Research internship - Deep Learning & Computer Vision**, *Institute for Infocomm Research, A*STAR*, Singapore. Conditional Random Fields and Deep Learning for multi-label classification. Awardee of the Singapore International Pre Graduate Award. *Supervisors:* Foo Chuan-Sheng and Vijay Chandrasekhar |

Work experience

| Jul. 2017 – Jan. 2018 | **Data Science internship**, *Head of Statistics, Banque de France*, France. Modeling of the French international trade in services. *Supervisor:* Martial Ranvier |
| 2017 | **Software Engineering mission**, *CNRS*, France. Translation of 18 of Gabriel Peyré's *Numerical Tours of Data Science* tutorials from Python to R: principles of Wavelet Data Processing, Denoising, Edge Detection and Manifold Learning. |

Computer skills

Languages	Python	*TensorFlow, PyTorch, Scikit-Learn, Pandas, Numpy*
	R	*ggplot, tidyr, leaflet, shiny, imager, caret, nnet*
	Matlab, C	
Others	Unix, Git	**GitHub: alex-delalande**

Languages

French	Native	
English	Fluent	*TOEFL iBT: 110/120, October 2017*
Spanish	Intermediate	*Understanding and writing*