Alex Delalande

Ph.D. candidate in Applied Mathematics at Université Paris-Saclay

✉ *alex.delalande@inria.fr*
alex-delalande.github.io

Education

Dec. 2019–Present **Ph.D. in Applied Mathematics**, ***Université Paris-Saclay & INRIA***, France.
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, Grade: 17.3/20, Highest honors.

2015–2019 **Diplôme d'ingénieur**, ***École Centrale Paris (now CentraleSupélec)***, France, Majoring in Applied Mathematics. - Grade: 4.0/4.3.

Publications and preprints

2022 **Quantitative Stability of Barycenters in the Wasserstein Space**, G. Carlier, A. Delalande, Q. Mérigot.
Preprint.

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 under review.

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

June 2022 **Mokaplan team seminar**, Paris, France.

June 2022 ***Journées SMAI MODE 2022***, Limoges, France.

May 2022 **DataShape team seminar**, Porquerolles, France.

Mar. 2022 ***AISTATS 2022***, Online.

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, top 10%)
- SIAM Journal on Imaging Sciences (SIIMS)
- Information and Inference: A Journal of the IMA

Teaching assistantships

2020-2022 **Université Paris-Saclay**, *(2 x 64h)*.
- 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**, *(10.5h)*.
- 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*

Referees

Quentin Mérigot
Université Paris-Saclay
quentin.merigot@universite-paris-saclay.fr
+33 (0)1 69 15 57 59

Guillaume Carlier
Université Paris Dauphine
carlier@ceremade.dauphine.fr
+33 (0)1 44 05 46 77