

Alex Delalande

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

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Education

- Dec. **Ph.D. in Applied Mathematics, *Université Paris-Saclay & INRIA***, France.
2019–Present 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, Ma-
joring in Applied Mathematics. - GPA: 4.0/4.3.

Publications

- 2021 **Nearly Tight Convergence Bounds for Semi-discrete Entropic Optimal Trans-
port**, 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: Computa-
tional 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***, Van-
couver, 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 × 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 – **Research internship - Optimal Transport**, *INRIA Saclay, DataShape team*, France.
Nov. 2019 Hilbert space embedding of (discrete) measures with optimal transport maps.
Supervisors: Frédéric Chazal and Quentin Mérigot
Feb. 2018 – **Research internship - Deep Learning & Computer Vision**, *Institute for Infocomm Research, A*STAR*, Singapore.
Jul. 2018 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 – **Data Science internship**, *Head of Statistics, Banque de France*, France.
Jan. 2018 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	<i>TensorFlow, PyTorch, Scikit-Learn, Pandas, Numpy</i>
	R	<i>ggplot, tidyr, leaflet, shiny, imager, caret, nnet</i>
	Matlab, C	
Others	Unix, Git	GitHub: alex-delalande

Languages

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