

# Alex Delalande

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

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[alex-delalande.github.io](https://alex-delalande.github.io)

## Education

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

## Publications and preprints

- 2022 **Quantitative Stability of Wasserstein Barycenters**, G. Carlier, A. Delalande, Q. Mérigot.  
*In preparation.*
- 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

- 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 – **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 | <b>GitHub: alex-delalande</b>                             |

## Languages

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

## Referees

**Quentin Mérigot**  
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