

# Alex Delalande

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

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## Education

- 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.

## 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.

## Publication

**Quantitative stability of optimal transport maps and linearization of the 2-Wasserstein space**, Q. Mérigot, A. Delalande, F. Chazal.  
Accepted to *NeurIPS 2019 "Optimal Transport and Machine Learning" Workshop*. Accepted to *AISTATS 2020*.

## Talks and Poster Presentations

- June 2020 **AISTATS 2020**, Palermo, Italy.
- Dec. 2019 **NeurIPS 2019 "Optimal Transport and Machine Learning" Workshop**, Vancouver, Canada.
- Nov. 2019 **DataShape team seminar**, Porquerolles, France.

## Computer skills

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

## Languages

French Native  
English Fluent  
Spanish Intermediate

*TOEFL iBT: 110/120, October 2017*  
*Understanding and writing*