

*PhD Student in Statistics, CREST - ENSAE - Institut Polytechnique de Paris*

## Education

- 2017–2020 **Institut Polytechnique de Paris**, *PhD in Statistics & Machine Learning*.  
2016–2017 **ENS Paris-Saclay**, *MSc in Machine Learning, MVA Master Program*.  
2014–2017 **ENSAE Paris**, *MSc in Economics and Statistics, Engineering degree*.

## Experience

### Academic positions

- Since Oct. **PhD Student & Teaching Assistant**, *IP Paris/CREST/ENSAE*, Paris.  
2017 PhD Thesis in the department of Statistics of CREST at IP Paris - ENSAE Paris
  - Theoretical properties of variational inference in statistics & machine learning
  - Under the supervision of Pr. Pierre Alquier, currently at RIKEN AIP, Tokyo
  - Teaching Assistant in mathematics at ENSAE Paris
    - Analysis & Topology, Undergraduate (L3) in Fall 2017-2019
    - Measure Theory, Undergraduate (L3) in Fall 2018 and 2019
    - Mathematical Statistics, Graduate (M1) in Fall 2018 and 2019
    - Machine Learning, Graduate (M1) in Spring 2018 and 2019 (R/Python)
    - Statistical Machine Learning, Graduate (M2) in Fall 2019 (R/Python)

### Industrial positions

- May–Sept. **Quantitative analyst**, *BNP Paribas*, Paris.  
2017 Internship in the Global Market Data & Artificial Intelligence Lab of the bank BNP Paribas
  - Exploitation of techniques of machine learning on financial and client data
  - Prediction and recommendation tasks on the bonds and on the Forex markets
  - Building of support models for traders and sales in a Python environment

June–Sept. **Economist**, *Mines ParisTech & Yacast*, Paris.  
2016 Internship in the research centre for industrial economics of the Grande Ecole Mines ParisTech
  - Analysis of the market of French radio for the monitoring media company Yacast
  - Building of a predictive model of musical playlists in a Python environment

Jan.–May **Data scientist**, *Accenture & M6*, Paris.  
2016 Part-time internship in the professional services company Accenture for the TV channel M6
  - Building of a recommender system for the TV on-demand service M6 Replay
  - Use of machine learning algorithms and data analysis tools in an R environment

June–Aug. **Statistician-Economist**, *DARES*, Paris.  
2015 Internship in the French statistical office of the Ministry of Labour
  - Statistical analysis of a survey dealing with training contracts in a SAS environment

## Publications

- 2019 **Finite sample properties of parametric MMD estimation: robustness to misspecification and dependence**, *BECA*, P. Alquier, Preprint Arxiv.  
2019 **MMD-Bayes: Robust Bayesian Estimation via Maximum Mean Discrepancy**, *BECA*, P. Alquier, Preprint Arxiv.  
2019 **Convergence Rates of Variational Inference in Sparse Deep Learning**, *BECA*, Preprint Arxiv.  
2019 **A Generalization Bound for Online Variational Inference**, *BECA*, P. Alquier, M.E. Khan, Proceedings of the 11th Asian Conference on Machine Learning (ACML).  
*Best paper award*

- 2019 **Consistency of ELBO maximization for model selection**, *BECA*, Proceedings of the 1<sup>st</sup> Symposium on Advances in Approximate Bayesian Inference (AABI).  
**Travel award**
- 2018 **Consistency of Variational Bayes Inference for Estimation and Model Selection in Mixtures**, *BECA*, *P. Alquier*, Electronic Journal of Statistics (EJS).

## Other Research Activities

- Awards **Best Paper Award** at the 11<sup>th</sup> Asian Conference on Machine Learning, 2019.  
**Travel Award** at the 1<sup>st</sup> Symposium on Advances in Approximate Bayesian Inference, 2018.
- Seminar Organization of the **CREST PhD Day**, CREST internal Annual Seminar for incoming PhD Students, Palaiseau (France)
- Talks
- Statistics/Machine Learning/Econometrics Seminar, CREST, Palaiseau (France), Nov. 2019.
  - Statistics Seminar, I2M, Marseille (France), Nov. 2019.
  - Sierra Seminar, INRIA - ENS, Paris (France), Oct. 2019.
  - PhD students days, Ecole Doctorale Mathématiques Hadamard, Palaiseau (France), May 2019.
  - AABI Symposium at NeurIPS, Montréal (Canada), Dec. 2018.
  - Statistics/Machine Learning/Econometrics Seminar, CREST, Palaiseau (France), Oct. 2018.
  - Probability and Statistics Seminar, Université Paris-Sud, Orsay (France), June 2018.
- Posters
- AABI Symposium, Vancouver (Canada), Dec. 2019.
  - Workshop on High-Dimensional Models, HSE, St. Petersburg (Russia), Aug. 2019.
  - AABI Symposium, Montréal (Canada), Dec. 2018.

## Skills and interests

- Programming Python, R, SAS, Matlab, Scilab
- Software LATEX, MS Word, MS Excel, MS Powerpoint
- Languages French (Native), English (Fluent), German (Intermediate), Chinese (Beginner)
- Interests Music (Doublebass, Piano), Sport (Football), Reading