

PhD in Statistics
Postdoctoral Fellow - Department of Statistics, University of Oxford

Academic position

- Since Sept. **University of Oxford**, *Postdoctoral fellow*, Oxford (UK).
2020 Postdoctoral researcher in the department of Statistics, working with Pr. Arnaud Doucet
Main research interests: Variational inference, PAC-Bayes, Generalization, Robustness
2017-2020 **CREST/ENSAE**, *PhD Student*, Paris (France).
PhD Thesis in the department of Statistics of CREST, supervised by Pr. Pierre Alquier
Title: *Contributions to the theoretical study of variational inference & robustness*
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)

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*.

Publications

- 2022 **Estimation of Copulas via Maximum Mean Discrepancy**, with P. Alquier, A. Derumigny & J.-D. Fermanian, To appear in the Journal of the American Statistical Association (JASA).
2022 **Finite sample properties of parametric MMD estimation: robustness to misspecification and dependence**, with P. Alquier, Bernoulli.
2020 **Convergence Rates of Variational Inference in Sparse Deep Learning**, Proceedings of the 37th International Conference on Machine Learning (ICML 2020).
2020 **MMD-Bayes: Robust Bayesian Estimation via Maximum Mean Discrepancy**, with P. Alquier, Proceedings of the 2nd Symposium on Advances in Approximate Bayesian Inference (AABI 2020).
2019 **A Generalization Bound for Online Variational Inference**, with P. Alquier & M.E. Khan, Proceedings of the 11th Asian Conference on Machine Learning (ACML 2019).
Best paper award
2019 **Consistency of ELBO maximization for model selection**, BECA, Proceedings of the 1st Symposium on Advances in Approximate Bayesian Inference (AABI 2019).
Travel award
2018 **Consistency of Variational Bayes Inference for Estimation and Model Selection in Mixtures**, with P. Alquier, Electronic Journal of Statistics (EJS).

Preprints

- 2021 **On PAC-Bayesian Reconstruction Guarantees for VAEs**, with Y. Shi, B. Guedj & A. Doucet, To appear (Submitted to AISTATS 2022).

Industrial experience

- 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

Research Activities

- Talks
- INRAE, MaLAGE team Seminar, Jouy-en-Josas (France), Jan. 2022.
 - Université Paris-Saclay, Probability and Statistics Seminar, Orsay (France), Dec? 2021.
 - University of Bristol, Statistics Seminar (UK), Oct. 2021.
 - Imperial College London, Statistics Seminar (UK), May 2021.
 - Sorbonne Université - Université de Paris, LPSM Seminar (France), Jan. 2021.
 - Alan Turing Institute, DCE Seminar, London (UK), Sept. 2020.
 - ICML (Remote), July 2020.
 - Riken AIP, PI Seminar, Tokyo (Japan), Feb. 2020.
 - CREST, Stats/ML/Econometrics Seminar, Palaiseau (France), Nov. 2019.
 - I2M, Statistics Seminar, Marseille (France), Nov. 2019.
 - INRIA - ENS Paris, Sierra Team Seminar, Paris (France), Oct. 2019.
 - Ecole Doctorale Mathématiques Hadamard, PhD days, Palaiseau (France), May 2019.
 - AABI Symposium, Montréal (Canada), Dec. 2018.
 - CREST, Stats/ML/Econometrics Seminar, Palaiseau (France), Oct. 2018.
 - Université Paris-Saclay, Probability and Statistics Seminar, Orsay (France), June 2018.
- Posters
- MHC Conference, Université Paris-Saclay, Orsay (France), June 2021.
 - AABI Symposium, Vancouver (Canada), Dec. 2019.
 - Structural Inference in High-Dimensional Models 2, HSE, St. Petersburg (Russia), Aug. 2019.
 - AABI Symposium, Montréal (Canada), Dec. 2018.
- Awards **Best Paper Award**, 11th Asian Conference on Machine Learning, 2019.
Travel Award, 1st Symposium on Advances in Approximate Bayesian Inference, 2018.
- Grants **Visiting Student Researcher Grant**, from the Jacques Hadamard Foundation (Junior Scientific Visibility) to visit the Approximate Bayesian Inference Team of the RIKEN Center for AI Project led by M.E. Khan, Tokyo (Japan), Feb. 2020.
PhD Grant, from GENES (French Ministry for the Economy and Finance), 2017-2020.
- Reviewing ICML, NeurIPS, AISTATS, AABI, JMLR, Biometrika, Entropy, IEEE TPAMI, Statistics & Probability Letters.

Skills and interests

- Programming Python, R
- Languages French (Native), English (Fluent), German (Intermediate), Chinese (Beginner)
- Interests Music (Doublebass, Piano), Sport (Football)