Jerome-Alexis **Chevalier**

PH. D. IN MACHINE LEARNING

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Summary

I recently obtained a PhD in machine learning working on the statistical control of sparse models in high dimension with application in neuro-imaging. Earlier, I worked in quantitative finance for more than two years and this is how I first learnt about machine learning. Quickly, I decided to specialize in machine learning since I am passionate by probability, statistics and coding. Now, I am looking for a position where I can contribute to "real-world" projects that require an expertise in machine learning solutions.

Education

Inria Paris-Saclay and Telecom ParisTech — *Paris*

PHD CANDIDATE: STATISTICAL CONTROL OF SPARSE MODELS IN HIGH DIMENSION — *2017 - 2021*

- Worked on several models for high dimensional inference (Desparsified Lasso, Multi-Split, Corrected Ridge, Residual Bootstrap)
- Worked on clustering and ensembling techniques suited for statistical inference
- Developed an algorithm (Ensemble of Clustered Desparsified Lasso) adapted for the statistical inference on neuro-imaging problems
- Developed a Python package for high dimensional inference: HiDimStat available at `https://ja-che.github.io/hidimstat/`
- Compared algorithms using several neuro-imaging datasets (HCP, IBC, Haxby, Oasis, Neurovault)
- Wrote several research articles in English for machine learning conferences and journals

Universite Paris Diderot, Paris 7 — *Paris*

MASTER OF SCIENCE: STATISTICS, PROBABILITY AND DATA SCIENCE (M2MO, EX-DEA LAURE ELIE) — *2016 - 2017*

- Machine Learning, Datamining, Probability, Statistics, Stochastic Calculus, Python, C++

Essec Busisness School — *Paris*

ADVANCED MASTER: FINANCIAL TECHNIQUES — *2013 - 2014*

ENSEIRB-MATMECA — *Bordeaux*

MASTER OF ENGINEERING: MATHEMATICAL MODELING AND MECHANICS — *2010 - 2013*

Lycee Michel Montaigne — *Bordeaux*

PREPARATORY CLASS: MATHEMATICS AND PHYSICS — *2008 - 2010*

Publications

MICCAI 2018: Chevalier, J.A., Salmon, J., Thirion, B.: Statistical inference with ensemble of clustered desparsified lasso
IPMI 2019: Chevalier, J.A., Nguyen, B., Thirion, B.: ECKO: Ensemble of clustered knockoffs for robust multivariate inference on MRI data
ICML 2020: Nguyen, B., Chevalier, J.A., Thirion, B., Arlot, S.: Aggregation of Multiple Knockoffs
NeurIPS 2020: Chevalier, Gramfort, Salmon, Thirion: Statistical control for spatio-temporal MEG/EEG source imaging with d-MTLasso
NeuroImage Journal 2021: Chevalier, Nguyen, Varoquaux, Salmon, Thirion: Decoding with confidence: Statistical control on decoder maps
Submitted to a statistical journal: Chevalier, Nguyen, Thirion, Salmon: Spatially relaxed inference on high-dimensional linear models

Experience

Inria Paris-Saclay — *Paris*

PHD CANDIDATE: STATISTICAL CONTROL OF SPARSE MODELS IN HIGH DIMENSION — *Sep. 2018 - Sep. 2019*

- Coding mission: contributed to Nilearn and Nistats machine learning libraries for neuro-imaging in Python

Amundi Alternative Investments — *London*

QUANTITATIVE ANALYST IN ALTERNATIVE INVESTMENTS — *Aug. 2015 - Aug. 2016*

- Developed and maintained quantitative tools to optimize the fund selection
- Contributed to the monthly allocation strategy outlooks working closely with three teams (Equity, Fixed Income, Macro)

BNP Paribas Investments Partners - THEAM — *Paris*

FUND MANAGER — *Nov. 2014 - Jun. 2015*

- Managed a range of CPPI lifecycle funds (AuM Eur 1 billion)
- Implemented the investment process including the risky asset allocation and the interest rate hedging

Oddo & Cie - Oddo Asset Management — *Paris*

QUANTITATIVE INVESTMENT ANALYST — *Apr. 2014 - Oct. 2014*

- Built investment style indexes and smart beta strategies to monitor market trends and develop new funds

Skills

Languages: French (native), English (fluent), Spanish (intermediate)
Programming languages and Softwares: Python (Scikit-Learn, Scipy, Numpy, Pandas, Matplotlib, Seaborn), R, C++, Latex, Git, Atom