

# Jerome-Alexis Chevalier

PH. D. IN MACHINE LEARNING

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## Summary

I recently obtained a **PhD in machine learning** that focuses on designing inference algorithms for neuro-imaging. I have a **three-year work experience** in quantitative investment. I decided to specialize in machine learning since I am **passionate about statistical learning and coding**. Now, I would like to **take part in concrete projects** that require machine learning skills.

## Experience

### Inria Paris-Saclay and Telecom ParisTech

Paris

PHD CANDIDATE AND DOCTORAL CODING MISSION

2017 - 2021

- Studied and **implemented many high dimensional inference methods** to estimate their performance on several neuro-imaging datasets
- Tested several clustering and ensembling techniques that can combine with statistical inference and deal with data spatially structured
- Designed inference algorithms that **achieve state-of-the-art results** in neuro-imaging and **additionally brings statistical guarantees**
- Developed an **open source Python package** for high dimensional inference: HiDimStat <https://ja-che.github.io/hidimstat/>
- Wrote **6 conference/journal articles** including papers that focus on broad experimental validations or on theoretical developments
- Advertised my research work at **international ML conferences** and team meetings giving **presentations in front of 50+ attendees**
- Acquired **Python good practices** contributing to Nilearn **open source ML library** which involves **100+ contributors / 1000+ users**

### Amundi Alternative Investments

London

QUANTITATIVE ANALYST IN ALTERNATIVE INVESTMENTS

Aug. 2015 - Aug. 2016

- Developed and maintained a **fund ranking algorithm** to select the 100 "best" hedge funds among the 1000+ referenced funds
- Contributed to the monthly allocation strategy outlooks **working closely with three different teams**: Equity, Fixed Income, Macro

### BNP Paribas Investments Partners - THEAM

Paris

FUND MANAGER

Nov. 2014 - Jun. 2015

- Managed a range of CPPI lifecycle funds corresponding to more than **1 billion Euros of assets under management**
- Completed the full investment process on a day-to-day basis 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 fund strategies

## Education

### Inria Paris-Saclay and Telecom ParisTech

Paris

PHD IN MACHINE LEARNING

2017 - 2021

- Statistical control of sparse models in high dimension - Supervised by Bertrand Thirion (Inria) and Joseph Salmon (ex-Telecom ParisTech)

### 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 Business 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

## Skills

**Programming:** Python (Scikit-Learn, Scipy, Numpy, Pandas, Matplotlib, Seaborn), R, C++, Matlab

**Tools:** Atom, Latex, Git, Jupyter notebooks, Linux, GitHub CI, Travis CI, PyPI

**Languages:** French (native), English (fluent), Spanish (intermediate)

**Extra:** Math tutoring, Chess (1800 elo), Sports (swimming (National 3), rugby, golf, running)