

# MASSIL ACHAB

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## EDUCATION

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**Ecole Polytechnique**, Palaiseau, France 2014 - 2017  
*Ph.D. in Machine Learning*  
Topics: Point Processes, Convex Optimization, Causality Inference.  
PhD thesis: Learning from Sequences with Point Processes.  
Supervisors: Prof. Emmanuel Bacry and Prof. Stéphane Gaïffas

**ENSAE**, Malakoff, France 2013 - 2014  
*MSc in Statistics & Machine Learning*  
Master thesis: Quantum model of interest rates.  
Supervisor: Dr. Taoufik Amri

**Ecole Polytechnique**, Palaiseau, France 2010 - 2013  
*BSc, MSc in Probabilities & Random Models*  
Bachelor thesis: Blackjack strategies with dynamic programming.  
Supervisor: Prof. Stéphane Gaubert

## EXPERIENCE

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**Ecole Polytechnique**, Palaiseau, France 2014 (4 months)  
*Research Intern*  
Developped a state-of-the-art algorithm for fitting large-scale Cox model.  
Supervisor: Prof. Stéphane Gaïffas

**Banque Populaire Caisses d'Epargne**, Paris, France 2013 - 2014 (7 months)  
*Research Assistant*  
Designed tools to model a yield curve using path integrals, based on Baaquie-Bouchaud model.  
Supervisor: Dr. Taoufik Amri

**Columbia University, Earth Institute**, New-York, USA 2013 (3 months)  
*Research Intern*  
Improved analysis tools of a crop simulation model based on Ensemble Kalman Filter.  
Supervisor: Prof. Amor Ines

## PUBLICATIONS

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[Analysis of order book flows using nonparametric estimation of branching ratio matrix](#), with E. Bacry, J.-F. Muzy, M. Rambaldi, *Quantitative Finance*, 2017.

[Uncovering Causality from Multivariate Hawkes Integrated Cumulants](#), with E. Bacry, S. Gaïffas, I. Mastromatteo, J.-F. Muzy, *International Conference on Machine Learning*, 2017

[SGD with Variance Reduction beyond Empirical Risk Minimization](#), with A. Guillaoux, S. Gaïffas, E. Bacry, *International Conference on Monte Carlo Methods and Applications*, 2017.

## TECHNICAL STRENGTHS

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<b>Computer Languages</b>	Python, C++, JavaScript, Scala, Spark, French (native speaker), English (fluent), German (intermediate)
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## EXTRACURRICULAR ACTIVITIES

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<b>X-Passion</b>	Keen writer of poems for the Ecole Polytechnique's magazine.
<b>Sports</b>	Football (with feet), Half Marathon runner.