

# Emilien Joly

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Birth date - 31/08/1987

Nationality : French

**Current position** (September 2016-August 2017) : post-doctoral researcher at Modal'X (Université Paris Ouest Nanterre), under the supervision of Antoine Chambaz, project Labex MME-DII.

## Education

- 2012-2015 **PhD under the supervision of Gábor Lugosi and Gilles Stoltz**, Title : *Robust estimation for heavy-tailed distributions*, at Ecole Normale Supérieure and at Université Paris-Sud.
- 2010-2011 **Agrégation de Mathématiques, ranked 52**, Option : *Probability and Statistics*.
- 2009-2010 **Master 2 degree**, *Probability and Statistics, with honors*, Courses attended : Stochastic calculus and Markov processes, Limit theorems and Levy processes, Percolation, Concentration of measure, Large deviations, Random matrices, Population dynamics, Random trees, Graduation report with Olivier Garet on oriented percolation.
- 2009 **Master 1 degree, with honors**, Université Paris Diderot, Graduation internship at IPAM, UCLA, Los Angeles.
- 2008-2009 **License 3 degree, with honors**, ENS Cachan.
- 2008-2012 **Normalien Student at [ENS Cachan](#)**, Paris.

## Research fields

- Semi-parametric inference, Sampling processes, Subsampling
- Robust estimation, Empirical processes, Entropic inequalities
- Gaussian concentration, Gaussian isoperimetrical inequalities, Influences
- $U$ -statistics,  $k$ -means, Clustering

## Publications

- 2016 CHAMBAZ A, JOLY E, MARY X, *Survey sampling targeted inference*, accepted.
- 2017 JOLY E, LUGOSI G, OLIVEIRA R, *On the estimation of the mean of a random vector*, to appear in Electronic Journal of Statistics.
- 2016 BERTAIL P, CHAMBAZ A, JOLY E, *Practical targeted learning from big data by survey sampling*, submitted.
- 2017 GUIHENEUF P-A, JOLY E, *A Minkowski theorem for weakly almost periodic sets*, to appear in Discrete and Computational Geometry.
- 2015 JOLY E, LUGOSI G, *Robust estimation of  $U$ -statistics*, published in Stochastic Processes and their Applications.
- 2015 BROWNLESS C, JOLY E, LUGOSI G, *Empirical risk minimization for heavy-tailed losses*, published in Annals of Statistics.
- 2012 GEORGESCU A, DENNY SJ, JOLY E, CHEN G, PEREZ D, VOTER AF, *Locally Disrupted Synchronization in Langevin Molecular Dynamics* published in Physical review.

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## Talks

- 03/2017 SMILE seminar at ENS Paris  
*Concentration for robust mean estimation : some theoretical results*
- 02/2017 Seminar Paris6/Paris7  
*Techniques de sous-échantillonnage et apprentissage non-paramétrique*
- 02/2017 Parisian seminar of Statistics at l'IHP  
*Concentration pour des estimateurs robustes de la moyenne : quelques résultats théoriques*
- 11/2016 Seminar in the team Ergodic theory, Dynamical systems at Amiens  
*Un théorème de Minkowski pour les ensembles quasi-périodiques*
- 09/2016 INRIA seminar at Lille  
*Concentration for robust mean estimation : some theoretical results*
- 06/2016 Conference ISNPS 2016 at Avignon  
*Targeted learning with big data*
- 05/2016 SPADRO seminar at Université Paul Sabatier Toulouse  
*A practical learning procedure in a big data context*
- 03/2016 Statistic seminar at Université Paul Sabatier Toulouse  
*Garanties sous-gaussiennes pour l'estimation de la moyenne : Une étude à variance finie*
- 10/2015 MODAL'X seminar at Paris Ouest Nanterre  
*Quelques techniques d'estimation robuste*
- 08/2015 Conference Statistiques Mathématiques et Applications at Fréjus  
*Robust estimation for heavy-tailed kernels*
- 03/2015 Statistic seminar at Université de Rouen  
*Estimation de pertes à queue lourde*
- 11/2014 PhD student seminar at Université Paris Descartes  
*Minimiser le risque empirique pour des pertes à queue lourde*
- 04/2014 Conference for young probabilists and statisticians researchers at Forge les eaux  
*Minimiser le risque empirique pour des pertes à queue lourde*
- 03/2014 PhD student seminar at Université Paris Sud  
*Recherche de minimum, apport de l'estimation robuste.*
- 05/2013 Statistical days in Toulouse (JDS)  
*Minimiser le risque empirique pour des pertes à queue lourde*
- 02/2013 PhD student seminar at Université Paris 6/7  
*Estime-toi robuste !*
- 03/2012 ENS Cachan student seminar  
*Détection de variables aléatoires contaminées et phénomènes de saut*
- 02/2012 ENS Ulm student seminar  
*Sur l'unicité de la composante connexe infinie en percolation orientée de dimension 2*

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## Conferences and Summer schools

- 06/2016 ISNPS 2016 at Avignon
- 11/2015 Sequential Learning and Applications at Toulouse
- 08/2015 Workshop Statistiques Mathématiques et Applications at Fréjus

- 04/2014 Conference for young probabilists and statisticians researchers at Forge les eaux
- 09/2013 Workshop Statistiques Mathématiques et Applications at Fréjus
- 05/2013 Statistical days (JDS) 2013 at Toulouse
- 03/2013 Spring school at Bad Belzig Germany
- 08/2012 Journées MAS at Clermont-Ferrand
- 01/2012 Winter school (Discrete Fourier Analysis) at l'Université Paris-Est, Marne La Vallée

## Teaching and scientific diffusion

### Teaching instruction at l'Université Paris-Ouest

- 2016-2017 **Exercise sessions, freshman class**, at l'Université Paris Ouest.

### Teaching instruction at l'Université Paris-Sud

- 2012-2015 **Exercise sessions, freshman engineering school class**, at IUT d'Orsay.
- 2012-2015 **Exercise sessions, senior year class**, at faculté des sciences d'Orsay.

### Miscellaneous

- 07/2012 **Jury for the International Tournament of Young Mathematicians**, at Polytechnique.
- 2010-2012 **Oral examinations in classe préparatoire**, at *Lycée Saint Louis in Paris*.

## Volunteering activities

- Depuis 2013 Member of the organizing committee of Mathematik Park (popularization seminar at Institut Henry Poincaré in Paris)
- 04/2013 Member of the organizing group of the Congrès Math En Jean 2013 at Orsay
- 2011-2012 Organizer (and co-creator) of the ENS Cachan student seminar

## Fundings

- 2015-2016 grant of the SPADRO project (ANR)
- 2012-2015 PhD student on a ASN grant (64h of teaching each year)
- 2008-2012 'Normalien' student at [ENS Cachan](#), *four years granted scholarship*

## Computer skills

Languages : Latex, Python, Matlab, Caml, HTML, CSS

## Foreign languages

- English Fluent
- Spanish Medium
- French Native