

Emilien Joly

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Birth date - 31/08/1987

Nationality : French

Current position (September 2017 - ..) : Tenure Track position at the institute of research CIMAT at Guanajuato (Mexico).

Education and Positions

- 2015-2017 **Post-doc under the supervision of Antoine Chambaz and Patrice Bertail**, in the team MODAL'X, at Université Paris Nanterre.
- 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.

Selected Talks

- 10/2017 Seminar of the team probability and statistics CIMAT, Guanajuato, Mexico
A few recent results on robust estimation
- 09/2017 Conference StatMathAppli at Fréjus, France
Concentration pour des estimateurs robustes de la moyenne : quelques résultats théoriques
- 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

Conferences and Summer schools

- 09/2017 Workshop Statistiques Mathématiques et Applications at Fréjus
- 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 the University Paris-Est, Marne La Vallée

Teaching and scientific diffusion

Teaching instruction at the University Paris-Ouest

- 2016-2017 **Exercise sessions, freshman class**, at University Paris Ouest.
Calculus I, Integration, Constraint optimization

Teaching instruction at the University Paris-Sud

- 2012-2015 **Exercise sessions, freshman engineering school class**, at IUT Orsay.
Probabilities for statistical inference, Stochastic simulations, Convex optimization
- 2012-2015 **Exercise sessions, senior year class**, at Orsay's Science Faculty.
Combinatorics, Elementary calculus of probabilities, Elementary statistical inference, Statistical tests

Miscellaneous

- 07/2012 **Jury for the International Tournament of Young Mathematicians**, at *Polytechnique*.
International tournament for 14 to 18 years old students competing about maths problems
- 2010-2012 **Oral examinations in classe préparatoire**, at *Lycée Saint Louis in Paris*.
Oral exercise sessions for small groups of students preparing highly competitive Engineering schools exams - 3h per week
- may 2015 **Mentoring two practical projects of Master 2 students**, at *Orsay's Science Faculty*.
Advising students on statistical choices to implement a practical case

Volunteering activities in science

- Ongoing Member of the organization committee of Mathematik Park (popularization seminar at Institut Henry Poincaré in Paris) - 1 Saturday/month
- 04/2013 Member of the organizing group of the 2013 "Math En Jean" Congress at Orsay's Science Faculty
- 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, R, Matlab, Caml, HTML, CSS

Foreign languages

English Fluent

Spanish Medium

French Native