

# Emilie Kaufmann

CNRS Junior Researcher, CRISAL

Inria Lille Nord-Europe, Equipe SequeL  
40, avenue du Halley  
59650 Villeneuve d'Asq  
☎ 03.59.57.79.12.  
✉ emilie.kaufmann@inria.fr

## Professional Experience

- oct. 2015 - **CNRS Junior Researcher (CR2).**  
Centre de Recherches en Informatique, Signal et Automatique de Lille (CRISAL), SequeL team.
- 2014 -2015 **Post-doctoral researcher at Inria.**  
Project-team DYOGENE, under the supervision of Marc Lelarge.
- 2011 -2014 **PhD candidate and teaching assistant.**  
Telecom ParisTech & Université Pierre et Marie Curie.

## Studies

- 2011-2015 **PhD in Statistics, Telecom ParisTech.**  
*Analyse de stratégies bayésiennes et fréquentistes pour l'allocation séquentielle de ressources*, under the supervisions of Olivier Cappé (LTCI, Telecom ParisTech), Aurélien Garivier (Université Paul Sabatier, Toulouse) and Rémi Munos (Inria Lille). **Prix de thèse Jacques Neveu 2014.**  
Defended on October 1st, 2014. Comity members: Jean-Michel Marin (President), Olivier Catoni and Nicolò Cesa-Bianchi (Referees), Gérard Biau and Thomas Bonald (Examiners), Olivier Cappé, Aurélien Garivier and Rémi Munos (PhD advisors).
- 2010-2011 **M.Sc. in Statistical Learning (Mathematics, Vision and Learning), ENS de Cachan.**  
Obtained with highest honnors.
- 2009-2010 **Agrégation de Mathématiques, ENS de Cachan.**  
A French competitive exam for teaching mathematics, ranked 30/263.
- 2009 **Admission in third year at ENS de Cachan.**
- 2007-2009 **Magistère of mathematics, Université de Strasbourg.**  
A reinforced cursus in parallel to the third year of Bachelor and the first year of Master.  
First year thesis *From complex analysis to the repartition of prime numbers*, under the supervision of Henri Carayol (Université de Strasbourg).  
Second year research intership at Université de Montréal, under the supervision of Jacques Bélair: a model for the evolution of the Body Mass Index of an individual.
- 2008-2009 **First year of Master in fundamental mathematics, Université de Strasbourg.**
- 2007-2008 **Bachelor in fundamental mathematics, Université de Strasbourg.**

## Teaching Activities

- 2011-2014 **Teaching assistant at Université Pierre et Marie Curie, Mathematics Department.**
- Probabilities and statistics, L3 (36 hours) : 2012-2013 and 2013-2014
  - Random process and simulation, L3 (26 hours) : 2012-2013
  - Complex analysis, L3 (36 hours) : 2011-2012
  - Matrix calculus, L1 (18 hours) : 2013-2014
  - Algebra and analysis, L1 (26 hours) : 2011-2013
- 2011-2014 **Practical sessions of reinforcement learning at Master MVA, ENS de Cachan.**  
4 sessions of 2h15 each year. Involved in the evaluation of the students final projects.
- 2010-2011 **Oral interrogations in mathematics.**  
2 hours/week at the PCSI level (*classe préparatoires*, major in physics).

---

## Research activities

### Publications

#### Preprint

- E. Kaufmann, T. Bonald and M. Lelarge, *An Adaptive Spectral Algorithms for the Recovery of Overlapping Communities in Networks*. Submitted.

#### Journal paper

- E. Kaufmann, O. Cappé and A. Garivier, *On the Complexity of Best Arm Identification in Multi-Armed Bandit Models*. Accepted for publication in the Journal of Machine Learning Research (JMLR), 2015.

#### Publications in international conferences

- E. Kaufmann, O. Cappé and A. Garivier, *On the Complexity of A/B Testing*. 27th Conference On Learning Theory (COLT), 2014
- N. Korda, E. Kaufmann and R. Munos, *Thompson Sampling for one-dimensional Exponential-Family Bandits*. Advances in Neural Information and Signal Processing (NIPS), 2013.
- E. Kaufmann and S. Kalyan Krishnan, *Information Complexity in Bandit Subset Selection*. 26th Conference On Learning Theory (COLT), 2013.
- E. Kaufmann, N. Korda and R. Munos, *Thompson Sampling: An Asymptotically Optimal Finite-Time Analysis*. 23rd International Conference on Algorithmic Learning Theory (ALT), 2012.
- E. Kaufmann, O. Cappé and A. Garivier, *On Bayesian Upper Confidence Bounds for Bandits Problems*. 15th International Conference on Artificial Intelligence and Statistics (AISTAT), 2012.

#### Workshop and conferences without proceedings

- E. Kaufmann, T. Bonald, M. Lelarge. *An Adaptive Spectral Algorithm for the Recovery of Overlapping Communities in Networks*. Workshop on *Features and Structures*, ICML, Lille, juillet 2015. (best poster award).
- E. Kaufmann, S. Kalyan Krishnan. *Information Complexity in Bandit Subset Selection*. *Journées Francophones sur la Planification, la Décision et l'Apprentissage pour la conduite de systèmes* (JFPDA), Lille, juillet 2013. (best poster award).
- E. Kaufmann, O. Cappé, A. Garivier. *On the Efficiency of Bayesian Bandits Algorithms from a Frequentist Point of View*. Workshop *Bayesian optimization, experimental design, and bandits*, NIPS, Granada, décembre 2011.

### Selected talks

- LINC Seminar, June 2015. *An adaptive spectral algorithm for the recovery of overlapping communities in networks*.
- SMILE Seminar, June 2015. *The information complexity of sequential resource allocation*.
- Séminaire de modélisation statistique, IRMA, Strasbourg, mars 2015.
- Séminaire de probabilités et statistique, Université de Lille, février 2015.
- 3èmes journées YSP (Young Statistician and Probabilists), janvier 2015. *Une introduction à l'allocation séquentielle de ressources* (tutoriel).
- Groupe de travail Statistique et Imagerie, Université Paris-Dauphine, décembre 2014.
- Séminaire parisien de théorie des jeux, IHP, décembre 2014.
- Junior Seminar, Inria, October 2014. *Optimal algorithms for sequential resource allocation*.
- Probability and Statistics Seminar, Université d'Angers, October 2014.
- Journées MAS, Toulouse, août 2014. *Two optimization problems in a stochastic bandit model*.
- Statistics Seminar of Université Paris-Sud, Orsay, May 2014.
- ANR ALICIA meeting, Toulouse, May 2014. *Contextual bandit models for personalized recommendation*.
- ANR SPADRO meeting, Nanterre, April 2014. *Regret minimization vs. Pure Exploration: two performance criteria for bandit algorithms*.
- Bayes In Paris Seminar, ENSAE, October 2013.
- 5èmes Rencontres des Jeunes Statisticiens, Aussois, August 2013.
- Wilks Seminar, Princeton University, May 2013. *Bayesian and Frequentist methods for bandit models*.
- SMILE Seminar, November 2012. *Un point de vue bayésien pour des algorithmes de bandit plus performants*.
- Invited talk at the workshop 'New Challenges in Exploration and Exploitation' of ICML, June 2012. *On Bayesian bandit algorithms*.

## Miscellaneous

- Reviewer for several journals (Automatica, Journal of Artificial Intelligence Research, Journal of Machine Learning Research) and conferences (AISTATS 2014, NIPS 2014, AISTATS 2015, COLT 2015, ICML 2015)
- Representative of the PhD students at the Research Comity of Telecom ParisTech
- Member of the PHD association of Telecom ParisTech: involved in the organisation of seminars and afterworks

---

## Skills

### Informatics

Programing Matlab, Python, Julia.

Misc. OS: Windows and GNU/Linux,  $\LaTeX$ , HTML/CSS.

### Languages

French (mother language)

English (fluent)

German and Spanish (basics)

---

## Interest

Music Choir singing, piano.

Sport Swimming, fitness, roller-skating.