

# Guillaume Gautier

2nd-year Ph.D. student

✉ [g.gautier@inria.fr](mailto:g.gautier@inria.fr)  
📄 [guilgautier.github.io](https://guilgautier.github.io)  
🌐 [github.com/guilgautier](https://github.com/guilgautier)

## Education

- 2017 - now **Ph.D. in Machine Learning**, *CRISAL – SequeL & SigMA teams*, Lille, France.  
*Fast Sampling of Determinantal Point Processes*. Supervisors: [Michal Valko](#) and [Rémi Bardenet](#).
- 2015 - 2016 **M.Sc. in Applied Mathematics**, *ENS Paris Saclay*, Cachan, France.  
**MVA, Mathematics - Computer Vision - Machine Learning**: Graphs in ML, MCMC Methods, Random Matrices, Convex Optimization, Probabilistic Graphical Models, Kernel Methods.
- 2014 - 2015 **M.Sc. in Applied Mathematics**, *Université Lille 1*, Lille, France.  
**Probability & Statistics**: Stochastic Processes, Percolation, Itô.  
Master Thesis: *Phase transition in the configuration graph*, [Chi Tran](#).
- 2012 - 2015 **M.Sc. in Engineering**, *École Centrale de Lille*, Lille, France.  
**Data Analysis & Decision making**: ML, Optimization, Statistical Estimation.
- 2010 - 2012 **Classes préparatoires**, *Lycée du Parc*, Lyon, France.  
Intensive preparatory courses in **Mathematics & Physics** for competitive entrance exams to French Grandes Écoles.

## Internships

- 2016 – 6 mth **Research**, *CRISAL – SigMA team*, Lille, [Rémi Bardenet](#).  
*Determinantal Point Processes and matroids*.
- 2015 – 5 mth **Research**, *Lawrence Berkeley National Laboratory*, Berkeley, CA, [Sylvain Costes](#).
  - Image processing algorithm for human DNA breaks diagnosis (MATLAB– DIPimage),
  - Image classification algorithm for fuzzy pictures (Python).
- 2014 – 4 mth **Engineering**, *R&D Arcelor Mittal – Iron Making*, Metz, France.
  - Build and implement a measurement system for an industrial pilot,
  - Data acquisition and analysis using Labview, MATLAB, R.

## Teaching

- 2019 – 15h **M1 practical sessions**, *Data Mining*, [Émilie Kaufmann](#), Université de Lille.  
Python and scikit-learn: k-Means, regression (lin, log), decision trees, SVMs, unsupervised learning.
- 2018 – 36h **L3 tutorial sessions**, *Analysis for Engineers*, [Augustin Mouze](#), École Centrale de Lille.
  - (26h) Measure, integration and distribution theory.
  - (10h) Refresher on mathematics essentials: matrix calculus, differential equations, convergence of sequences, topology.
- 2017 – Fall **M2 class projects**, *Graphs in Machine Learning*, [Michal Valko](#), MVA – ENS Paris Saclay.  
I supervised Juliette Millet and Sébastien Deschamps, and Quentin Chan Wai Nam for their respective class project.
  - The goal was to review *Line Graphs of Weighted Networks for Overlapping Communities*, and apply this edge-centric point of view to reveal overlapping communities in the application of their choice: few tomes of One Piece. [GitHub page](#).
  - The goal was to review *Graph sampling with determinantal processes*, and implement the key algorithms to efficiently sample a graph signal for reconstruction purposes. [GitHub page](#).
- 2017 – 14h **L3 tutorial sessions**, *Analysis for Engineers*, [Augustin Mouze](#), École Centrale de Lille.  
Measure and integration theory.
- 56h **L3 practical sessions**, *Signal Processing*, [Pierre Chainais](#), École Centrale de Lille.  
Filtering, time-frequency analysis, sampling theory.

