

Raphaël Berthier

Curriculum Vitae

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Research

- 2021 - ... **Post-doctoral researcher at EPFL (Lausanne, Switzerland).**
- 2018-2021 **PhD in the SIERRA team (INRIA, DI ENS, CNRS, in Paris) under the supervision of Francis Bach and Pierre Gaillard.**
Subject: Analysis and Acceleration of Gradient Descents and Gossip Algorithms.
- Spring 2017 **Internship in Stanford University, under the supervision of Andrea Montanari, 4 months.**
Subject: Compressed Sensing and Approximate Message Passing algorithms.

Studies

- 2014-2018 **Studies at the Ecole Normale Supérieure Ulm (Paris).**
- 2016-2017 **Master 2 in probabilities and statistics, University Paris-Sud (Orsay).**
- 2015-2016 **Master 1 in fundamental mathematics, ENS Ulm.**
- Summer 2015 **Internship at Qucit (start-up in Bordeaux, France), 2 months.**
Subject: statistical inference of urban movements, in particular using databases of bicycle-sharing systems.
- 2014-2015 **Bachelor of Science in mathematics and in computer science, "Licence" in french, ENS Ulm.**
- July 2014 **Admitted to the Ecole Normale Supérieure (Paris), competitive exam, section mathematics - physics - computer science.**
- 2012-2014 **Preparation for the competitive exam of the ENS, Mathematics and physics section, Preparation school of the Lycée Marcelin Berthelot, Saint-Maur-des-Fossés.**
- 2012 **Baccalauréat (french high-school degree), Scientific and international english sections.**

Publications and preprints

- 2021 **M. Even, R. Berthier, F. Bach, N. Flammarion, P. Gaillard, H. Hendrikx, L. Massoulié and A. Taylor, A Continuized View on Nesterov Acceleration for Stochastic Gradient Descent and Randomized Gossip, preprint.**
- 2020 **R. Berthier, F. Bach and P. Gaillard, Tight Nonparametric Convergence Rates for Stochastic Gradient Descent under the Noiseless Linear Model, Advances in Neural Information Processing Systems (NeurIPS).**

- 2020 **R. Berthier, F. Bach and P. Gaillard**, *Accelerated Gossip in Networks of Given Dimension using Jacobi Polynomial Iterations*, SIAM Journal on Mathematics of Data Science.
- 2018 **R. Berthier, A. Montanari and P.-M. Nguyen**, *State Evolution for Approximate Message Passing with Non-Separable Functions*, Information and Inference: a Journal of the IMA.

Research talks

- Aug. 2020 **Bernoulli-IMS One World Symposium 2020**.
- Aug. 2020 **"Statistical physics and machine learning" summer school**, *Les Houches, France*.
- Nov. 2019 **MIC group meeting**, *New York University*.
- Nov. 2017 **Golosino seminar**, *École Normale Supérieure, Paris*.
- Nov. 2017 **SMILE seminar**, *Institut Henri Poincaré, Paris*.
- Oct. 2017 **Seminar of the SIERRA team**, *INRIA Paris*.

Teaching

- 2019-2021 **Teaching assistant in statistical learning**.
Ecole Normale Supérieure, Paris
- 2019-2020 **Lecturer in linear algebra**.
Pluridisciplinary Cycle in Economics and Social sciences, PSL Research University, Paris
- 2014-2017 **Oral examinations in mathematics in "classe préparatoire" (equivalent to first and second year university students in mathematics)**.
at the school Louis-le-Grand, in Paris,
at the school Marcelin Berthelot, in Saint-Maur-des-Fossés, France.