
Personal information

Name Barbier Jean

Birth

Mail

Main positions Research Scientist (Tenured Associate Professor) at [ICTP](#) and Adjunct Professor at [SISSA](#)

Education

- 2012–2015 [Physics Laboratory of ENS](#), Paris FR
PhD in Theoretical Physics and Signal Processing, supervised by [Pr. F. Krzakala](#)
Obtained with “Congratulations of the Jury” (top 10%)
- 2010–2012 University Paris-Sud, Politecnico di Torino, SISSA and ICTP, IT and FR
[International MSc in Physics of Complex Systems](#) (double degree)
Obtained with the highest honours

Current and previous positions

- 2022–present [International Center for Theoretical Physics](#) (ICTP), Trieste IT
Research Scientist (Tenured Associate Professor)
- 2020–present [International School for Advanced Studies](#) (SISSA), Trieste IT
Adjunct Professor in the Department of Data Science
- fall 2021 Simons Institute for the Theory of Computing, Berkeley US
Invited long-term Scientist, program in [Computational complexity of statistical inference](#)
(declined due to COVID)
- 2019–2022 [International Center for Theoretical Physics](#) (ICTP), Trieste IT
Associate Research Officer (Tenure Track Assistant Professor)
- 2018–2019 Physics Laboratory of ENS, Paris FR
[Laplace Junior Professor in Data Science](#)
- 2017–2018 [Probability Group](#), Queen Mary University, London UK
Permanent Lecturer in Statistical Machine Learning
- 2015–2018 [Communication Theory Laboratory](#), Federal Institute of Technology (EPFL), Lausanne CH
Postdoc in the group of [Dr. Nicolas Macris](#)

Scientific activity

High-dimensional statistics, probability, random matrix theory ● Bayesian inference ● information theory ● mathematical and statistical physics (spin glasses) ● statistical machine learning ● probabilistic graphical models, message-passing ● signal processing

Fellowships and grants

- 2022–2027 1.3 million euros ERC Starting Grant from the [European Research Council](#) obtained in PE1–Mathematics for the project CHORAL: Computational Hardness Of RepresentAtion Learning
- fall 2021 Long-term visit fellowship from the [Simons Institute for the Theory of Computing](#), Berkeley
(declined due to COVID)
- 2015 Awarded the chair of [Laplace Junior Professor in Data Science](#), ENS Paris. Funding from “ENS-CFM Research Chair on Models and Science of Data” from Capital Fund Management
- 2012 [VINCI PhD fellowship](#) from the University Franco-Italienne (one/year in France): declined
[Selective PhD fellowship](#) from the French Army Ministry (DGA): accepted

Supervision

- 2019–present ICTP and SISSA, Trieste IT
4 MSc students, 1 PhD student (T. Hou) and 1 Postdoc (M. Sáenz)
- 2015–2018 EPFL, Lausanne CH
2 MSc students (1 leading to [publication](#) with E. Biyik).
Co-supervision with Dr. N. Macris of 3 PhD students (M. Dia, C-L. Chan and C. Luneau)

Teaching activities

- 2020–present SISSA PhD programs in Mathematics, Physics and Data Science, Trieste IT
Mean-field theory of high-dimensional Bayesian inference (35 hours)
- 2020 [International MSc in Mathematics](#), Lahore PAK
Machine learning (20 hours, online)
- 2019–present ICTP, Trieste IT
Statistical mechanics with python (30 hours) and Machine learning (30 hours)
- 2012–2013 Universities Paris 5 and 7, FR
Probability (30 hours) and Classical mechanics (30 hours)

Organisational and editorial activity

- 2023 Technical Program Committee for the [IEEE Information Theory Workshop](#) (ITW)
- 2022–present Action Editor for the [Transactions on Machine Learning Research](#) (TMLR)
- 2022 Main organizer of [Random matrices, random graphs and statistical physics for machine learning and inference](#), ICTP Trieste, Italy
- 2021–present Area Chair for the [Neural Information Processing Systems conference](#) (NeurIPS)
- 2020–present Main organizer of [Youth in high-dimensions](#): recent progress in machine learning, high-dimensional statistics and inference, ICTP Trieste, Italy
- 2020–2022 Program Committee Member
[Mathematical and Scientific Machine Learning conference](#) (MSML)
- 2020 CSRC-ICTP one day online workshop
[Big data, machine learning and complexity research](#)
- 2020 Two days online conference
[Mathematical methods and models in machine learning](#)
- 2019 [IEEE CAMSAP conference](#), Guadeloupe FR. Special session
Statistical physics for signal processing and learning

Reviewing activities

American Math. Society Jrnl. (AMS) - Neural Info. Processing Systems Conf. (NeurIPS) - Trans. on Machine Learning Research (TMLR) - Math. and Scientific Machine Learning Conf. (MSML) - Intl. Conf. on Machine Learning (ICML) - Intl. Conf. on Learning Representations (ICLR) - Math. Statistics and Learning - IEEE Trans. on Info. Theory - IEEE Intl. Symposium on Info. Theory (ISIT) - IEEE Info. Theory Workshop (ITW) - Jrnl. of Phys. A - Jrnl. of Stat. Phys. - Jrnl. of Stat. Mech.

Major collaborations

N. Macris, F. Krzakala and L. Zdeborová (EPFL) - D. Panchenko (Toronto U) - W.K. Chen (Minnesota U) - P. Contucci (Bologna University) - F. Ricci-Tersenghi (Sapienza University) - M. Gabrié (Polytechnique) - C. Rush (Columbia) - G. Reeves (Duke) - M. Mézard (ENS) - E. Roldán and A. Ingrosso (ICTP) - S. Goldt (SISSA) - M. Mondelli (IST Austria) - P. Sur (Harvard)