Timothée Mathieu | CV

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0651228712 • timothee.mathieu@inria.fr • born 26/11/1993

Professional experience

Research

2021-now Post-Doc at INRIA, team SCOOL (Lille)

Teaching

2020-2021 Teaching Assistant, statistics course for M1 Stat-Ai of computer science Master at University Paris-Saclay.

2018-2021 Teaching Assistant, statistics course for L3 Mathematics in interaction at University Paris-Saclay.

2018-2020 Teaching Assistant, statistics course for M1 applied mathematics at ENSTA.

Education

Principal education

2018-2021 Ph.D. at Paris-Saclay University (Orsay).
Subject : M-estimators and Median-of-Means Applied to Statistical Learning, under the supervision of Matthieu Lerasle and Guillaume Lecué.

2016-2017 Master 2 MVA (Mathematics for Vision and Learning) at Ecole Normale Supérieur de Cachan.

2014-2018 Ecole Normale Supérieur de Cachan

Internships

2017-2018 Internship at University of Geneva on "Robust statistics and their applications to the Median of Means", under the supervision of Elvezio Ronchetti (9 months)

2016-2017 Internship at University of Orsay on "Median of Means risk minimization", under the supervision of Matthieu Lerasle (4 months)

2015-2016 Internship at IMT (Mathematical Institute of Toulouse) on unsupervised learning, under the supervision of Sébastien Gerchinovitz and Aurélien Garivier (4 months).

2014-2015 Internship at ENS Cachan, Center of Mathematics and Their Applications (CMLA) "Analysis of Time-Frequency Physiological Signals" under the supervision of Thomas Moreau (4 months).

Computer libraries

rlberry Main developer of rlberry, a python library for reinforcement learning, developed by INRIA SCOOL.
`https://github.com/rlberry-py/rlberry`

farmgym Contribution to Farm-Gym, Farming Environment Gym factory for Reinforcement Learning.
`https://github.com/farm-gym/farm-gym`

scikit-learn-extra contribution to the machine learning library scikit-learn-extra, member of the project scikit-learn-contrib.
`https://github.com/scikit-learn-contrib/scikit-learn-extra`

Invited Talks

2022 Popular science seminar on Machine Learning, with title "Les statistiques ne servent pas que à nous espionner" in Douai (59).

2021 Robust study of consistent M-estimators using an optimal-transport distance, at MAS days (Modélisation Aléatoire et Statistique).

2021 Robust Machine Learnings with Median of Means and M-estimators (60 minutes) for Séminaire Palaisien.

2021 M-estimation and Median of Means for Robust Machine Learning (60 minutes) Geneva School of Economics and Management, GSEM, University of Geneva.

2020 Concentration Inequalities on M-estimators for Robust Mean Estimation (30 minutes) Winter School on Mathematical Statistics, University of Luxembourg.

2019 Robust Machine Learning (20 minutes) StatMathAppli Statistics Summer School (Fréjus).

2018 Robust Machine Learning (50 minutes) Machine Learning and Massive Data Analysis (MLMDA) research group, ENS Cachan.

Review of articles

Journals

2022 Bernoulli

2021 Annales de l'institut Henri Poincaré

2019, 2022 Journal of the American Statistical Association (JASA).

Conference

2022 Neural Information Processing Systems (NIPS-2022)

2021 International Conference on Machine Learning (ICML-2021)

2020 International Conference on Learning Representations (ICLR-2021).

Summer school and conferences

2020, 2021 International Conference on Machine Learning *ICML*

2020 Winter School on Mathematical Statistics, University of Luxembourg.

2020 Meeting in Mathematical Statistics, CIRM (Centre International de Rencontres Mathématiques).

2019 StatMathAppli statistics summer school at Fréjus.

2019 Saint-Flour Statistics and Probability Summer School.

Awards

Prix de thèse de la chancellerie Ph.D. prize, science section for year 2022.

Journals & Confrences

[1] Claire Brécheteau, Edouard Genetay, Timothee Mathieu, and Adrien Saumard. Topics in robust statistical learning. *ESAIM : Proceedings and Surveys*, 2022. URL : https://hal.archives-ouvertes.fr/hal-03605702.

[2] Matthieu Lerasle, Timothée Mathieu, and Guillaume Lecué. Robust classification via MOM minimization. *Machine Learning*, 109(8) :1635–1665, 2020. URL : https://link.springer.com/article/10.1007%2Fs10994-019-05863-6.

[3] Matthieu Lerasle, Zoltán Szabó, Timothée Mathieu, and Guillaume Lecué. MONK – outlier-robust mean embedding estimation by median-of-means. In *International Conference on Machine Learning (ICML)*, pages 3782–3793, 2019.

[4] Timothée Mathieu. Concentration study of M-estimators using the influence function. *Electronic Journal of Statistics*, 16(1) :3695 – 3750, 2022. doi:10.1214/22-EJS2030.

[5] Stanislav Minsker and Timothée Mathieu. Excess risk bounds in robust empirical risk minimization. *Information and Inference : A Journal of the IMA*, 2020.

Pre-prints

[1] Debabrota Basu, Odalric-Ambrym Maillard, and Timothée Mathieu. Bandits corrupted by nature : Lower bounds on regret and robust optimistic algorithm, 2022. URL : https://arxiv.org/abs/2203.03186, doi:10.48550/ARXIV.2203.03186.