Marc Jourdan

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Education

2021 – 2024 **Ph.D. in Computer Science**, Inria Scool (CRIStAL), **Université de Lille**, Lille, France.
Multi-Armed Bandits, Pure Exploration, Best Arm Identification, Differential Privacy.
Thesis title: *Solving Pure Exploration Problems with the Top Two Approach.*
Supervisors: Dr. Émilie Kaufmann and Dr. Rémy Degenne.
Thesis manuscript: https://theses.hal.science/tel-04804590.

2018 – 2020 **M.Sc. Data Science**, *with distinction (GPA 5.8/6)*, **ETH Zürich**, Zürich, Switzerland.
Statistics, Machine Learning. Master's Thesis in the Learning & Adaptive Systems group.
Thesis title: *Pure Exploration for Combinatorial Bandits with Semi-Bandit Feedback.*
Supervisors: Dr. Mojmír Mutný, Dr. Johannes Kirschner and Prof. Dr. Andreas Krause.

2015 – 2019 **Ingénieur (M.Sc.)**, *with distinction (top* 10%*)*, **École Polytechnique**, Palaiseau, France.
Applied Mathematics, Computer Science.

2013 – 2015 **Classes préparatoires**, **Lycée Louis-Le-Grand**, Paris, France.
Mathematics, Physics, Computer Science.

Academic and industry research experience

Academic positions

2024 – Present **Postdoctoral researcher**, TML Laboratory, **EPFL**, Lausanne, Switzerland.
Study learning theory for large language models, focused on preference-based fine-tuning.
Advisor: Dr. Nicolas Flammarion.

2021 – 2024 **Graduate researcher**, Inria Scool (CRIStAL), **Université de Lille**, Lille, France.
Studied pure exploration problems with the Top Two approach.
Supervisors: Dr. Émilie Kaufmann and Dr. Rémy Degenne.

Visiting stays and internships

2024 (3 mo.) **Visiting researcher**, LAILA, **Università degli Studi di Milano**, Milan, Italy.
Studied adversarial linear contextual bandits.
Supervisor: Prof. Dr. Nicolò Cesa-Bianchi.

2021 (5 mo.) **Research intern**, Scool (formerly SequeL), **Inria**, Lille, France.
Studied bandit identification with continuous answers.
Supervisor: Dr. Rémy Degenne.

2019 (6 mo.) **Data scientist** (part-time), **AMAG Leasing**, Zürich, Switzerland.
Created a recommender system for customers, developed churn prediction models.

2018 (5 mo.) **Research intern**, AI @ Nation Scale, **IBM Research**, Singapore.
Characterized entities in the Bitcoin blockchain, probabilistically modeled its evolution.
Supervisors: Dr. Sébastien Blandin, Dr. Laura Wynter and Dr. Pralhad Deshpande.

2017 (3 mo.) **Research intern**, **ST Microelectronics**, Crolles, France.
Quantized convolutional neural network for electronic chip.
Supervisor: Pascal Urard.

Teaching positions

2022 **Teaching assistant**, *Computational Statistics* (M.Sc.), **Université de Lille**, Lille, France.

2020 **Teaching assistant**, *Machine Perception* (M.Sc.), **ETH Zürich**, Zürich, Switzerland.

Awards and grants

Awards

2025 **Runner-up PhD Award** of SSFAM (Francophone Learned Society for Machine Learning).
Runner-up PhD Award of AFIA (French Association for Artificial Intelligence).

Grants

2024 **International mobility grant**, Program "France 2030" (SFRI project GRAEL), 2250 €.
2021 – 2024 Recipient of **AI_PhD@Lille Fellowship**, THIA ANR program.

Publication list

International journals

[1] A. Azize*, M. **Jourdan***, A. Al Marjani, and D. Basu, "Differentially private best-arm identification," *Journal of Machine Learning Research (JMLR)*, 2026, Accepted for publication.

International conferences with proceedings

[1] M. **Jourdan*** and A. Azize*, "Optimal best arm identification under differential privacy," *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

[2] M. **Jourdan**, G. Yüce, and N. Flammarion, "Learning parametric distributions from samples and preferences," *International Conference on Machine Learning (ICML)*, 2025, **Spotlight** (2.6%).

[3] C. Kone, M. **Jourdan**, and E. Kaufmann, "Pareto set identification with posterior sampling," *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.

[4] R. Poiani*, M. **Jourdan***, R. Degenne, and E. Kaufmann, "Best-arm identification in unimodal bandits," *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.

[5] M. **Jourdan**, R. Degenne, and E. Kaufmann, "An ε-best-arm identification algorithm for fixed-confidence and beyond," *Advances in Neural Information Processing Systems (NeurIPS)*, 2023.

[6] A. Azize, M. **Jourdan**, A. Al Marjani, and D. Basu, "On the complexity of differentially private best-arm identification with fixed confidence," *Advances in Neural Information Processing Systems (NeurIPS)*, 2023.

[7] M. **Jourdan** and R. Degenne, "Non-asymptotic analysis of a ucb-based top two algorithm," *Advances in Neural Information Processing Systems (NeurIPS)*, 2023, **Spotlight** (3.06%).

[8] M. **Jourdan**, R. Degenne, and E. Kaufmann, "Dealing with unknown variances in best-arm identification," *Algorithmic Learning Theory (ALT)*, 2023.

[9] M. **Jourdan**, R. Degenne, D. Baudry, R. De Heide, and E. Kaufmann, "Top two algorithms revisited," *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.

[10] M. **Jourdan** and R. Degenne, "Choosing answers in ε-best-answer identification for linear bandits," *International Conference on Machine Learning (ICML)*, 2022.

[11] M. **Jourdan**, M. Mutný, J. Kirschner, and A. Krause, "Efficient pure exploration for combinatorial bandits with semi-bandit feedback," *Algorithmic Learning Theory (ALT)*, 2021.

Under review in international journals

[1] M. **Jourdan** and C. Réda, "An anytime algorithm for good arm identification," 2023.

International workshops with proceedings

[1] M. **Jourdan**, K. Martinkus, D. Roschewitz, and M. Strohmeier, "I know where you are going: Predicting flight destinations of corporate and state aircraft," in *Engineering Proceedings*, 2021.

[2] M. **Jourdan**, S. Blandin, L. Wynter, and P. Deshpande, "A probabilistic model of the bitcoin blockchain," in *Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 2019.

[3] M. **Jourdan**, S. Blandin, L. Wynter, and P. Deshpande, "Characterizing entities in the bitcoin blockchain," in *International Conference on Data Mining Workshops (ICDMW)*, 2018.

Other research activities

Selected Invited Talks

2025 **CREST** seminar, ENSAE, Palaiseau, France.
Ghost seminar, Inria, Grenoble, France.
Malt seminar, Inria, Rennes, France.
ILOCOS seminar, CentralSupélec, Palaiseau, France.
ML-MTP seminar, Inria, Montpellier, France.
Conférence sur l'Apprentissage automatique (CAp), Dijon, France.

2024 **Conférence sur l'Apprentissage automatique** (CAp), Lille, France.
LAILA seminar, University of Milan, Italy.
Foundations of Learning and AI Research (FLAIR) seminar, EPFL, Switzerland.
Data Science seminar, University of Neuchâtel, Switzerland.

2023 **Learning & Adaptive Systems** (LAS) seminar, ETH Zürich, Switzerland.
Algorithmic Learning Theory (ALT) conference, Singapore.

2022 **StatMathAppli** conference, Fréjus, France.
Scool seminar, Inria, Lille, France.

2021 **Scool** seminar, Inria, Lille, France.
Algorithmic Learning Theory (ALT) conference, Paris, France.

2020 **Learning & Adaptive Systems** (LAS) seminar, ETH Zürich, Switzerland.

Reviewing

NeurIPS (2025), ICML (2025, 2024), AISTATS (2026, 2025, 2024, 2023), EWRL (2025, 2024, 2023), ALT (2026, 2021), IEEE JSAIT.