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.

Research and Work 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**, **STMicroelectronics**, Crolles, France.
Quantized convolutional neural network for electronic chip.
Supervisor: Pascal Urard.

Teaching and Supervision

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

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

Publications

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

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

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

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

Preprints

[1] A. Azize*, M. **Jourdan***, A. Al Marjani, and D. Basu, "Differentially private best-arm identification," 2024.

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

Other Research Activities

Selected Invited Talks

2025 **CREST** seminar, ENSAE, Palaiseau, France.

Ghost seminar, Inria, Grenoble, France.

Malt seminar, Inria, Rennes, France.

Other Research Activities (continued)

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.

Selected Posters

2025 **Advances in Neural Information Processing Systems** (NeurIPS), San Diego, US.
NeurIPS@Paris, SCAI, Paris.
International Conference on Machine Learning (ICML), Vancouver, Canada.
2023 **Advances in Neural Information Processing Systems** (NeurIPS), New Orleans, US.
NeurIPS@Paris, SCAI, Paris.
Workshop on Bandits and Statistical Tests, Potsdam, Germany.
European Workshop on Reinforcement Learning (EWRL), Brussels, Belgium.
Reinforcement Learning Summer School (RLSS), Barcelona, Spain.
2022 **Advances in Neural Information Processing Systems** (NeurIPS), New Orleans, US.
NeurIPS@Paris, SCAI, Paris.
StatMathAppli, Fréjus, France.
International Conference on Machine Learning (ICML), Baltimore, US.
Ecole de Printemps d'Informatique Théorique (EPIT), CIRM, Marseilles, France.

Reviewing

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

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

Skills

Languages French (native), English (fluent), German (B2).
Coding Julia, Python, R, LaTeX, Java, C++, Bash.