

Marc Jourdan



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@MarcJourdan5

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**, G. Yüce, and N. Flammarion, “Learning parametric distributions from samples and preferences,” *International Conference on Machine Learning (ICML)*, 2025, **Spotlight** (2.6%).
- [2] C. Kone, M. **Jourdan**, and E. Kaufmann, “Pareto set identification with posterior sampling,” *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.
- [3] R. Poiani*, M. **Jourdan***, R. Degenne, and E. Kaufmann, “Best-arm identification in unimodal bandits,” *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.
- [4] 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.
- [5] 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.
- [6] 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%).
- [7] M. **Jourdan**, R. Degenne, and E. Kaufmann, “Dealing with unknown variances in best-arm identification,” *Algorithmic Learning Theory (ALT)*, 2023.
- [8] M. **Jourdan**, R. Degenne, D. Baudry, R. De Heide, and E. Kaufmann, “Top two algorithms revisited,” *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- [9] M. **Jourdan** and R. Degenne, “Choosing answers in ε -best-answer identification for linear bandits,” *International Conference on Machine Learning (ICML)*, 2022.
- [10] 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.
- [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.
- [12] 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.
- [13] 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] M. **Jourdan** and A. Azize, “Optimal best arm identification under differential privacy,” 2025.
- [2] A. Azize, M. **Jourdan**, A. Al Marjani, and D. Basu, “Differentially private best-arm identification,” 2024.
- [3] M. **Jourdan** and C. Réda, “An anytime algorithm for good arm identification,” 2023.

Other Research Activities

Selected Invited Talks

- 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.

Other Research Activities (continued)

- 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

- 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

ICML (2025, 2024), AISTATS (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.