Louis Faury, Ph.D.

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Work Experience

Criteo   **Paris**
Machine Learning Researcher   *Since 2021*
Research on bandit algorithms and reinforcement learning. Internal consulting for engineering teams on projects such as dynamic allocation of competing marketing campaigns, or efficient exploration/exploitation in bandit binary games.

PhD Student Researcher   *2018-2021*
Research on learning from non-linear and non-stationary bandit feedback. Focus on the design of new algorithms with strong theoretical guarantees. Authored several papers in top-tier conferences (ICML, AISTATS, ALT).

Research Intern   *Automn 2017*
Development of a deep reinforcement learning approach for learning hyper-parameter free optimizers for ML tasks. Findings resulted in a scientific publication at the LION conference.

Exotec Solution   **Paris**
AI Consultant   *2016-2017*
Development of algorithms for the deployment of mobile robot fleets in warehouses.

Research Intern   *Spring 2016*
Design, development and implementation of robust and embedded control algorithms for wheeled robots. Rewarded as best internship for industrial use by the Prix de la Fondation de l'École Polytechnique.

Education

TélécomParis, Institut Polytechnique de Paris
Doctor of Philosophy (Ph.D.) in Machine Learning   *2018-2021*
Variance-Sensitive Confidence Intervals for Parametric and Offline Bandits.

École Polytechnique Fédérale de Lausanne
Master of Science in Microengineering   *2016-2018*
Machine learning, optimal control, robotics. Grade 5.8/6.

École Polytechnique
Master of Science in Applied Mathematics (Cycle ingénieur de l'École Polytechnique)   *2013-2018*
Control theory and statistics. GPA 3.8/4.

Academic Experience

Publications in International Conferences

[1] Louis Faury, Yoan Russac, Marc Abeille, Clément Calauzènes. A Technical Note on Non-Stationary Parametric Bandits: Existing Mistakes and Preliminary Solutions. *International Conference on Algorithmic Learning Theory (ALT)*, 2021.

[2] Marc Abeille, Louis Faury, Clément Calauzènes. Instance-Wise Minimax Optimal Algorithm for Logistic Bandits. *International Conference of Artificial Intelligence and Statistics (AISTATS)*, 2021.

[3] Yoan Russac, Louis Faury, Olivier Cappé, Aurélien Garivier. Self-Concordant Analysis of Generalized Linear Bandits under Forgetting. *International Conference of Artificial Intelligence and Statistics (AISTATS)*, 2021.

[4] Louis Faury, Marc Abeille, Clément Calauzènes, and Olivier Fercoq. Improved Optimistic Algorithms for Logistic Bandits. *International Conference on Machine Learning (ICML)*, 2020.

[5] Louis Faury, Ugo Tanielian, Elvis Dohmatob, Elena Smirnova and Flavian Vasile. Distributionally Robust Counterfactual Risk Minimization. *AAAI Conference on Artificial Intelligence*, 2020.

[6] Louis Faury, Flavian Vasile. Rover Descent: Learning to Optimize by Learning to Navigate on Prototypical Loss Surfaces. *International Conference on Learning and Intelligent Optimization (LION)*, 2018.

Publication in Workshops

[7] Louis Faury, Clément Calauzènes and Olivier Fercoq. Benchmarking GNN-CMA-ES on the BBOB noiseless testbed. *Genetic and Evolutionary Computation Conference Companion*, 2019.

[8] Otmane Sakhi, Louis Faury and Flavian Vasile. Improving Offline Contextual Bandits with Distributional Robustness. *RecSys Workshop on Reinforcement Learning and Robust Estimators for Recommendation Systems (REVEAL'20)*, 2020.

Scientific Talks

ML Big Weeks at Criteo, 2021: Jointly Efficient and Optimal Logistic Bandit Algorithms
AISTATS (oral presentation), 2021: Instance-Wise Minimax-Optimal Logistic Bandit Algorithms
DSAIDIS Chair Day, 2020: Non-Linearity in Parametric Bandits
AAAI (oral presentation), 2020: Distributionally Robust Counterfactual Risk Minimization

Reviewing Activity

Reviewer at NeurIPS (2020), ICML (2020,2021), AISTATS (2021, 2022), ALT (2021), JMLR (2021)

Past Scientific Projects

Reinforcement learning from noisy demonstrations
Research semester project at LASA   *Spring 2017*
Completing a research project in the laboratory of learning algorithms at EPFL. Focusing on the role of compliance in a reinforcement learning framework, in order to learn from noisy demonstrations. Grade 6/6.

Building an autonomous quadricopter
navi drone project at École Polytechnique   *2015- 2016*
Development of a fully autonomous drone. In charge of the positioning module, the autonomous flight algorithms and their validation on a simulator. Grade A, nominated for best scientific project this year.

Miscellaneous

IT: Python, C/C++, Matlab, Java, and various machine learning APIs

Languages: French (native), English (C2, TOEIC 980/990), Spanish (C2), Norwegian (basic)

Hobby: Alpinism, rock-climbing, back-country skiing