Rémi Leluc, PhD

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Research Experience

École Polytechnique (CMAP) (Institut Polytechnique de Paris, France) *Apr. 2023 - present*
Postdoctoral Researcher working on Federated Learning. Supervised by Aymeric Dieuleveut.

Télécom Paris (Institut Polytechnique de Paris, France) *Oct. 2019 - Mar. 2023*
Working towards a PhD in applied mathematics in the S2A team under the supervision of François Portier and Pascal Bianchi. Publications in international peer reviewed conferences and journals (NeurIPS, ICML, JMLR). Teaching assistant for graduate level students.

TotalEnergies OneTech (Palaiseau, France) *Oct. 2021 - Apr. 2022*
Artificial Intelligence Researcher within the DataAI team of Sébastien Gourvénec.
Study and design reinforcement learning techniques for industry, filing of a patent.

Télécom Paris (Institut Polytechnique de Paris, France) *Apr. 2019 - Sep. 2019*
Research intern in the department IDS/S2A under the direction of François Portier.
Conducted research on Monte Carlo methods and variance reduction in high dimension.

Ugam Solutions (Bengaluru, India) *Jul. 2018 - Sep. 2018*
Data analyst intern: Study and deployment of a deep learning model for multiple object detection.

Education

Télécom Paris (Institut Polytechnique de Paris, France) *Oct. 2019 - Mar. 2023*
PhD in Applied Mathematics and Computer Science, supervised by François Portier and Pascal Bianchi
"Monte Carlo methods and Stochastic Approximation: Theory and Applications to Machine Learning"
Keywords: Monte Carlo, stochastic approximation, variance reduction, adaptive sampling. [PDF]

École Normale Supérieure Paris-Saclay (Cachan, France) *2018 - 2019*
MSc in Machine Learning and Computer Vision (MVA) *Highest honours*
Highly selective Master of Science program in mathematics, vision and machine learning.
Studied different aspects of machine learning such as optimization, stochastic methods, reinforcement learning, kernel methods, geometric approaches in statistical learning, deep learning.

Télécom Paris (Institut Polytechnique de Paris, France) *2016 - 2019*
MSc in Applied Mathematics and Computer Science *GPA 4.0*
One of France's most prestigious competitive engineering schools (#1 in computer science).

Lycée Condorcet (Paris, France) *2013 - 2016*
CPGE MPSI-MP:* Intensive courses in mathematics, physics and computer science to prepare for competitive entrance exams to top engineering and science schools.

Technical and Soft Skills

Technical	Statistics, Probabilities, Optimization, Machine Learning
Computer	Python (NumPy, PyTorch, TensorFlow), LaTeX, Git, Pack Office
Languages	French (native), English (fluent), Spanish (elementary), arabic (notion)
Soft Skills	Adaptability, Reliability, Curiosity, Positivity

Other/Interests

Music	Piano (+15years) and musical training at the conservatory
Leisure	Workout, Chess, Travels (US, Europe, Asia), Humanitarian trip in Cambodia

Publications

Control Variate Selection for Monte Carlo Integration. R. Leluc, F. Portier, J. Segers.
Statistics and Computing 31, 2021

Feature Clustering for Support Identification in Extreme Regions. H. Jalalzai, R. Leluc.
International Conference on Machine Learning (ICML), 2021

SGD with Coordinate Sampling: Theory and Practice. R. Leluc, F. Portier.
Journal of Machine Learning Research 23 (JMLR), 2022

A Quadrature Rule combining Control Variate and Adaptive Importance Sampling
R. Leluc, F. Portier, J. Segers, A. Zhuman
Advances in Neural Information Processing Systems (NeurIPS), 2022

MARLIM: Multi-Agent Reinforcement Learning for Inventory Management
R. Leluc, E. Kadoche, A. Bertoncello, S. Gourvénec
NeurIPS Workshop on Reinforcement Learning for Real Life, 2022

Membership Inference Attacks via Adversarial Examples
H. Jalalzai, E. Kadoche, R. Leluc, V. Plassier
NeurIPS Workshop on Trustworthy and Socially Responsible Machine Learning, 2022

Asymptotic Analysis of Conditioned Stochastic Gradient Descent. R. Leluc, F. Portier.
Under review

Speeding up Monte Carlo Integration: Nearest Neighbors as Control Variates
R. Leluc, F. Portier, J. Segers, A. Zhuman.
Under review

Talks and Events

Seminar S2A (Télécom Paris) *Feb. 2023*

Poster Session NeurIPS 2022 (New Orleans, Louisiana) *Dec. 2022*

Seminar SIERRA (Inria, Paris) *Jul. 2022*

Math for Machine Learning Summer School (Ben Guérir, Morocco) *Jul. 2022*

Semaine Etudes Mathematiques Entreprise (SEME) (Rennes, France) *May. 2022*

Poster Session ICML 2021 (virtual) *Jul. 2021*

Extreme Value Analysis (EVA) (virtual) *Jul. 2021*

Seminar EDMH (virtual) *Apr. 2021*

Bernoulli-IMS One World Symposium (virtual) *Aug. 2020*

Machine Learning Summer School (MLSS) (virtual, 15% acceptance rate) *Jul. 2020*

Workshop Probabilistic Methods in Computational Statistics (Télécom SudParis) *Nov. 2019*

Teaching Experience

Télécom Paris *2019 - 2022*
Teaching assistant

- Linear Models (SD-TSIA204): 20h
- Bayesian statistics (M2-DataScience): 10h
- Statistics (MDI220/MDI720): 24h
- Optimization for Machine Learning (SD-TSIA211): 10h
- Martingales and Asymptotic statistics (MACS203): 26h