

Anthony Bardou

POSTDOCTORAL RESEARCHER IN MACHINE LEARNING

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Experience

École Polytechnique Fédérale de Lausanne

Lausanne, CH

POSTDOCTORAL RESEARCHER @ INDY LAB

Oct. 2023 - Now

- **Collaboration:** Prof. Patrick THIRAN
 - Researched theoretical guarantees and applications of Bayesian optimization algorithms in several contexts.
- Keywords:** Online Learning, Decentralized Algorithm, Time-Varying Optimization, Bayesian Optimization

École Normale Supérieure de Lyon

Lyon, FR

RESEARCH INTERN @ LIP/DANTE

Apr. 2020 - Sep. 2020

- **Subject:** Machine Learning for the Spatial Reuse of Wi-Fi Networks.
 - **Supervision:** Prof. Thomas BEGIN, Prof. Anthony BUSSON
 - Problem addressed from a centralized, reinforcement learning perspective, evaluated with an homemade Wi-Fi network simulator.
- Keywords:** Online Learning, Multi-Armed Bandit, Spatial Reuse

Université Claude Bernard Lyon I

Lyon, FR

RESEARCH INTERN @ LIRIS/SyCoSMA AND ELICO

Dec. 2018 - Jun. 2019

- **Subject:** Automatic Characterization of Citation Intentions in Scientific Publications.
 - **Supervision:** Prof. Frédéric ARMETTA, Prof. Marc BERTIN
 - Researched and contributed to attention and embedding techniques adapted to citations.
- Keywords:** Natural Language Processing, Embedding, Attention, Deep Learning, PyTorch

Université de Perpignan Via Domitia

Perpignan, FR

UNDERGRADUATE RESEARCH INTERN @ LIRMM/DALI

Apr. 2018 - Jun. 2018

- **Subject:** Robustness of a Non Intrusive System Capable of Measuring the Human Respiratory Volume.
 - **Supervision:** Assistant Prof. David PARELLO, Prof. Henri MÉRIC
 - Produced a robustness analysis and performed a computational complexity reduction through combinatorial optimization.
- Keywords:** Combinatorial Optimization, Robustness Analysis, Image Processing

Education

École Normale Supérieure de Lyon

Lyon, FR

PHD IN MACHINE LEARNING AND WIRELESS NETWORKS

Oct. 2020 - Sep. 2023

- **Subject:** Online Learning for the Optimization of Wireless Networks and Beyond.
- **Supervision:** Prof. Thomas BEGIN
- **Award:** GDR RSD/ASF Best Ph.D. Thesis
- Researched zeroth-order optimization algorithms to optimize high-dimensional noisy black-box functions in a variety of applications, with a strong focus on wireless networks.

Université Claude Bernard Lyon I

Lyon, FR

M.S. IN DATA SCIENCE

Sep. 2018 - Sep. 2020

- Rank: 1 / 47
- Highest Honors

Université de Perpignan Via Domitia

Perpignan, FR

B.S. IN COMPUTER SCIENCE AND MATHEMATICS

Sep. 2015 - Jul. 2018

- Rank: 1 / 16
- Highest Honors

Skills

Data Science Machine Learning, Data Mining, Big Data, Probabilistic Graphical Models

Applied Math. Bayesian Inference, Optimization, Statistics, Performance Evaluation, Operations Research

Programming PyTorch, BOPorch, Python, C/C++, Java, JavaScript

Languages French, English, Spanish (notions), German (notions)

Honors & Awards

INTERNATIONAL

- 2024 **Top Reviewer**, 38th Annual Conference on Neural Information Processing Systems *Vancouver, CA*
- 2022 **Best Paper Award**, 25th International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems *Montréal, CA*

NATIONAL

- 2025 **Best Ph.D. Thesis**, GDR Réseaux et Systèmes Distribués / Association ACM SIGOPS France *Toulouse, FR*

Publications

INTERNATIONAL CONFERENCES

ANTHONY BARDOU, PATRICK THIRAN, GIOVANNI RANIERI. This Too Shall Pass: Removing Stale Observations in Dynamic Bayesian Optimization. *Proc. NeurIPS'24*. *Vancouver, Canada*. Dec. 2024. [↗](#)

ANTHONY BARDOU, PATRICK THIRAN, THOMAS BEGIN. Relaxing the Additivity Constraints in Decentralized No-Regret High-Dimensional Bayesian Optimization. *Proc. ICLR'24*. *Vienna, Austria*. May 2024. [↗](#)

ANTHONY BARDOU, THOMAS BEGIN. INSPIRE: Distributed Bayesian Optimization for ImproviNg SPatial REuse in Dense WLANs. *Proc. MSWiM'22*. *Montréal, Canada (QC)*. Oct. 2022. 10.1145/3551659.3559050. [↗](#) **BEST PAPER AWARD**.

ANTHONY BARDOU, THOMAS BEGIN, ANTHONY BUSSON. Improving the Spatial Reuse in IEEE 802.11ax WLANs: A Multi-Armed Bandit Approach. *Proc. MSWiM'21*. *Alicante, Spain*. Nov. 2021. 10.1145/3479239.3485715. [↗](#)

PEER-REVIEWED JOURNALS

SAMIR SI-MOHAMMED, **ANTHONY BARDOU**, THOMAS BEGIN, ISABELLE GUÉRIN-LASSOUS, PASCALE VICAT-BLANC. NS+ NDT: Smart Integration of Network Simulation in Network Digital Twin, Application to IoT Networks. *Future Generation Computer Systems*. Mar. 2024. [↗](#)

ANTHONY BARDOU, THOMAS BEGIN. Analysis of a decentralized Bayesian optimization algorithm for improving spatial reuse in dense WLANs. *Computer Communications, ACM MSWiM 2022 Special Issue*. Jun. 2023. 10.1016/j.comcom.2023.06.004 [↗](#)

ANTHONY BARDOU, THOMAS BEGIN, ANTHONY BUSSON. Mitigating Starvation in Dense WLANs: A Multi-Armed Bandit Solution. *Ad Hoc Networks*, Vol. 138. Jan. 2023. 10.1016/j.adhoc.2022.103015 [↗](#)

ANTHONY BARDOU, THOMAS BEGIN, ANTHONY BUSSON. Analysis of a Multi-Armed Bandit Solution for Improving the Spatial Reuse of New Generation WLANs. *Computer Communications, ACM MSWiM 2021 Special Issue, Pages 279-292*. Sep. 2022. 10.1016/j.comcom.2022.07.015 [↗](#)

PH.D. THESIS

ANTHONY BARDOU. Online Learning for the Black-Box Optimization of Wireless Networks. *École Normale Supérieure de Lyon*. *France*. Sep. 2023. [↗](#) **GDR RSD/ASF BEST PH.D. THESIS AWARD**.

Talks

- Mar. 2025 **Invited Speaker**, Journées GDR Réseaux et Systèmes Distribués *Toulouse, FR*
- Jun. 2024 **Invited Speaker**, INRIA Maracas / INSA Lyon *Lyon, FR*
- May 2023 **Invited Speaker**, INDY / EPFL *Lausanne, CH*
- Jul. 2022 **Invited Speaker**, INRIA Maracas / INSA Lyon *Lyon, FR*
- Jun. 2022 **Oral Presentation**, AlgoTel'22 *Paris, FR*
- Feb. 2022 **Oral Presentation**, ROADEF'22 *Lyon, FR*
- Dec. 2021 **Invited Speaker**, INRIA Ockham / ENS Lyon *Lyon, FR*
- May 2021 **Invited Speaker**, INRIA Maracas / INSA Lyon *Lyon, FR*
- Nov. 2020 **Invited Speaker**, Performance Evaluation for Networks *Lyon, FR*
- Jul. 2018 **Invited Speaker**, LIRMM / Univ. Perpignan *Perpignan, FR*

Academic Service

REVIEWS

Since 2025	Transactions on Machine Learning Research , Peer-Reviewed Journal
Since 2025	International Conference on Machine Learning , International Conference
Since 2024	Uncertainty in Artificial Intelligence , International Conference
Since 2024	Computer Networks , Peer-Reviewed Journal (Elsevier)
Since 2023	Neural Information Processing Systems , International Conference
Since 2023	Computer Communication , Peer-Reviewed Journal (Elsevier)
Since 2023	International Symposium on Information Theory , International Conference (IEEE)

TEACHINGS

Fall 2024	Stochastic Modeling for Telecommunications , 30 hours @ EPFL (Bachelor)	Lausanne, CH
Spring 2023	Preparation to the <i>agrégation</i> of Computer Science , 32 hours @ ENS Lyon (Master)	Lyon, FR
Spring 2022	Numerical Methods , 15 hours @ UCBL (Bachelor)	Lyon, FR
Spring 2022	Optimization , 15 hours @ UCBL (Bachelor)	Lyon, FR
Fall 2021	Introduction to Artificial Intelligence , 12 hours @ UCBL (Master)	Lyon, FR
Fall 2021	Optimization and Operations Research , 18 hours @ UCBL (Master)	Lyon, FR

SUPERVISION AND MENTORING

Spring 2025	Robin Jaccard , Master Thesis @ EPFL	Lausanne, CH
Spring 2025	Adrien Deschenaux , Bachelor Semester Project @ EPFL	Lausanne, CH
Spring 2025	Aryan Ahadinia , Master Semester Project @ EPFL	Lausanne, CH
Fall 2024	Antoine Merel , Master Semester Project @ EPFL	Lausanne, CH
Fall 2024	Nahuel Plomb Veuve , Bachelor Semester Project @ EPFL	Lausanne, CH
Spring 2024	Emanuele Mengoli , Master Thesis @ EPFL (from École Polytechnique)	Lausanne, CH
Spring 2024	Giovanni Ranieri , Bachelor Semester Project @ EPFL	Lausanne, CH
Spring 2023	Hugo Martel , Bachelor Research Internship @ ENS Lyon	Lyon, FR

External Accolades

Prix de thèse du GDR RSD : des travaux sur l'optimisation récompensés ↗	Jan. 2025	INS2I (CNRS)
Lauréats du prix de thèse GDR RSD – Édition 2024 ↗	Sep. 2024	GDR RSD (CNRS)
L'optimisation bayésienne au service des performances du WiFi ↗	Apr. 2023	INS2I (CNRS)

Open-Source Repositories

W-DBO: Wasserstein Distance-Based Dynamic Bayesian Optimization	May 2024	WDBO-ALGORITHM/wdbo_algo ↗
DuMBO: High-Dimensional, No-Regret Bayesian Optimization	Feb. 2023	abardou/dumbo ↗