Anthony **Bardou**

PhD Student in Machine Learning and Wireless Networks

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Experience

École Polytechnique Fédérale de Lausanne
Lausanne, Switzerland

Visiting PhD Student @ INDY Lab
Sep. 2022 - Dec. 2022

- **Supervision**: Patrick THIRAN
- Created a new decentralized Bayesian optimization algorithm with competitive performance on a variety of applications.

Keywords: Online Learning, Decentralized Algorithm, Bayesian Optimization

École Normale Supérieure de Lyon
Lyon, France

Research Intern @ LIP/DANTE
Apr. 2020 - Sep. 2020

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

Keywords: Online Learning, Multi-Armed Bandit, Spatial Reuse

Université Claude Bernard Lyon I
Lyon, France

Research Intern @ LIRIS/SyCoSMA and ELICO
Dec. 2018 - Jun. 2019

- **Subject**: Automatic Characterization of Citation Intentions in Scientific Publications.
- **Supervision**: Frédéric ARMETTA, 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, France

Undergraduate Research Intern @ LIRMM/DALI
Apr. 2018 - Jun. 2018

- **Subject**: Study the Robustness of a Non Intrusive System Capable of Measuring the Human Respiratory Volume.
- **Supervision**: David PARELLO, 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, France

PhD in Machine Learning and Wireless Networks
Oct. 2020 - Sep. 2023

- **Subject**: Online Learning for the Optimization of Wireless Networks and Beyond.
- **Supervision**: Thomas BEGIN
- 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, France

M.S. in Data Science
Sep. 2018 - Sep. 2020

- Rank: 1 / 47
- Highest Honors

Université de Perpignan Via Domitia
Perpignan, France

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	Python, C/C++, Java, JavaScript
Languages	French, English, Spanish (notions), German (notions)

Publications

Peer-Reviewed Journals

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*

International Conferences

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.*

National Conferences

A. BARDOU, T. BEGIN. INSPIRE : Optimisation Bayésienne Distribuée pour l'Amélioration de la Réutilisation Spatiale des WLANs Denses. *Proc. AlgoTel'22.* *Saint-Rémy-Lès-Chevreuse, France.* *Jun. 2022.* **BEST PAPER AWARD.**

A. BARDOU, T. BEGIN, A. BUSSON. Algorithme de Multi-Armed Bandit pour la Réutilisation Spatiale des WLANs : Réduire le nombre de Stations en Famine. *Proc. ROADEF'22.* *Lyon, France.* *Feb. 2022.*

Talks

Invited Speaker @ INDY, EPFL	May 2023	*Lausanne, Switzerland*
Invited Speaker @ INRIA Maracas, INSA Lyon	Jul. 2022	*Lyon, France*
Invited Speaker @ INRIA Ockham, ENS Lyon	Dec. 2021	*Lyon, France*
Invited Speaker @ INRIA Maracas, INSA Lyon	May 2021	*Lyon, France*
Invited Speaker @ PEVA for Networks	Nov. 2020	*Lyon, France*
Invited Speaker @ LIRMM, Univ. Perpignan	Jul. 2018	*Perpignan, France*

Reviewing Activity

Computer Communication	Elsevier Journal
International Symposium on Information Theory	IEEE International Conference

Teaching Experience

Preparation to the *agrégation* of C.S.	32 hrs	M.S. of Computer Science	Spring 2023	*École Normale Supérieure de Lyon*
Numerical Analysis	15 hrs	B.S. of Computer Science	Spring 2022	*Université Claude Bernard Lyon I*
Optimization	15 hrs	B.S. of Computer Science	Spring 2022	*Université Claude Bernard Lyon I*
Basics of Artificial Intelligence	12 hrs	M.S. of Computer Science	Fall 2021	*Université Claude Bernard Lyon I*
Optimization & Operations Research	18 hrs	M.S. of Computer Science	Fall 2021	*Université Claude Bernard Lyon I*

Schools

Spring School of Theoretical Computer Science on Machine Learning (EPIT'22) — *Luminy, France*
CENTRE INTERNATIONAL DE RECONTRES MATHÉMATIQUES (CIRM) — *May 2022*

Mentions

L'optimisation bayésienne au service des performances du WiFi — Apr. 2023 — *INS2I (CNRS)*