

Aurélien Bellet

Antenne Inria de l'Université de Montpellier
860 Rue de St-Priest, 34090 Montpellier, France
✉ aurelien [dot] bellet [at] inria [dot] fr
🌐 <http://researchers.lille.inria.fr/abellet/>



Positions

- 2023–present** **Senior Researcher (*directeur de recherche*)**, Inria, Montpellier, France.
Tenured position. Member of the [PreMeDICaL team](#).
- 2015–2023** **Junior Researcher (*chargé de recherche*)**, Inria, Lille, France.
Tenured position. Member of the [Magnet team](#).
- 2019–2022** **Invited Associate Professor**, *Télécom Paris*, Paris, France.
Research collaborations with the [S2A team](#) and teaching courses on machine learning.
- 2014–2015** **Postdoctoral Researcher**, *LTCI UMR CNRS 5141, Télécom Paris*, Paris, France.
Working with [Stéphan Cléménçon](#) on decentralized machine learning, statistical learning with U -statistics and graph inference.
- 2013–2014** **Postdoctoral Researcher**, *University of Southern California*, Los Angeles, USA.
Working with [Fei Sha](#) on metric learning, distributed machine learning and applications to speech recognition.

Education

- 2021** **Habilitation thesis (HDR) in Computer Science**, *Université de Lille*, France.
The title was “Contributions to Decentralized and Privacy-Preserving Machine Learning”. Reviewers: [Francis Bach](#), [Kamalika Chaudhuri](#), [Catuscia Palamidessi](#). Committee members: [Claude Castelluccia](#) (president), [Brendan McMahan](#) (invited member), [Peter Richtárik](#), [Adam Smith](#), [Marc Tommasi](#).
- 2009–2012** **Ph.D. in Computer Science and Engineering**, *Université de Saint-Étienne*, France.
Highest honors. The title was “Supervised Metric Learning with Generalization Guarantees” and my advisors were [Marc Sebban](#) and [Amaury Habrard](#).
- 2009–2010** **Postgraduate Diploma in Informatics**, *University of Edinburgh*, Scotland.
 - Major: Learning from Data. Done concurrently with my 1st year of PhD.
- 2007–2009** **MSc in Computer Science**, *Université de Saint-Étienne*, France.
 - Major: Machine Learning and Data Mining. Graduate exchange student at McMaster University.

Research contributions and impact

My research is in the **theory and algorithms of machine learning**. Specifically, I have contributed to the topics of distributed, decentralized and federated learning algorithms, privacy-preserving machine learning, metric and representation learning, statistical learning theory, as well as applications to speech and natural language processing. As of January 2024, I have published **60+ papers in international journals and peer-reviewed conferences** and **1 book** (Morgan & Claypool), see [\[link\]](#) for a detailed list. My work has been **cited 8000+ times** and my **h-index is 27** according to [Google Scholar](#).

Awards and honors

- Ph.D. award** Best PhD award from the French Association for Artificial Intelligence (AFIA).
- Reviewer award** Among the top 200 reviewers (3000 in total) of the conference NeurIPS 2018.

Research grants

- As principal investigator or coordinator**
- **SSF-ML-DH** (1800k€), PEPR Digital Health, 2023-: Secure, safe and fair machine learning for healthcare.
 - **FedMalin** (1472k€), funded by Fondation Inria and Groupe La Poste, 2022-: Federated Machine Learning over the Internet.
 - **PRIDE** (209k€), funded by ANR (JCJC program), 2021-: Privacy-Preserving Decentralized Machine Learning.
 - **FLAMED** (276k€), funded by Inria and REACT-EU, 2020-: Federated Learning and Analytics on Medical Data.
 - **PAD-ML** (11k€), Inria associate team with the Alan Turing Institute (UK), 2018-2021: Privacy-Aware Distributed Machine Learning.
 - **SkMetricLearn** (95k€), funded by Inria, 2017-2019: Scikit-learn Integrated Metric Learning.
 - **LEGO** (113k€), Inria associate team with Fei Sha's group at USC, 2016-2022: Learning Good representations for natural language processing.
- As WP leader**
- **IPoP** (5552k€), PEPR Cybersecurity, 2022-: Interdisciplinary Project on Privacy.
- As member** Projects funded by France, the US and Europe, see [\[link\]](#) for a detailed list.

Supervision

- Postdocs** B. Le Bars (2021-, Inria-EPFL fellowship), M. Maouche (2019-2021), M. Ailem (2017-2018, Inria@SiliconValley fellowship).
- Ph.D. students** R. Khellaf (2023-), B. Erraji (2023-), C. Pierquin (2023-), T. Ceberé (2022-), E. Cyffers (2021-), J.-R. Conti (2021-, CIFRE thesis), G. Maheshwari (2020-), P. Mangold (2020-2023), M. Asadi (2018-2022), B. Mohan Lal Srivastava (2018-2021), M. Vargas Vieyra (2018-2021), R. Vogel (2017-2020, CIFRE thesis).
- Engineers** P. Andrey (2022-), N. Bigaud (2022-2023), Y. Bouillard (2020-2021), W. de Vazelhes (2017-2019, working on `metric-learn`).
- Visiting Ph.D. students** A. Shahin Shamsabadi (2020-2021, Queen Mary University of London), T. Kulkarni (2018, University of Warwick), V. Zantedeschi (2018, University of Saint-Etienne).
- Master interns** A. El Mrini (École Polytechnique, 2023), M. Allard (École Centrale de Lille, 2023), A. Oueslati (ENS Paris-Saclay, 2023), K. Larbi (ENSAE, 2022), N. Bigaud (PSL, 2022), M. Vargas (Univ. of Chile, 2021), M. Noble (École Polytechnique, 2021), G. Rudloff (Univ. Técnica Federico Santa María, 2021), E. Cyffers (ENS Lyon, 2020), P. Mangold (ENS Lyon, 2019), A. Capriski (Univ. Lille, 2018), A. d'Azémar (Univ. Lille, 2018), R. Vogel (ENSAE, 2016), P. Dellenbach (École Polytechnique, 2016), P. Vanhaesebrouck (École Polytechnique, 2016 - *best internship award*), T. Liétard (ENS Rennes, 2016), M. Flauder (ENS Paris, 2015)

Teaching activities

I have taught **undergraduate, graduate and continuing education courses** on machine learning and computer science at various universities and top-tier French engineering schools. I also gave **lectures at (international) research schools**: Peyresq Summer School, Hi! Paris Summer School on AI & Data, French-German Summer School on Artificial Intelligence with Industry, Federated Learning Winter School, Research School on Uncertainty in Scientific Computing, Winter School on Distributed Systems and Networks, ETH/Max Planck Pre-doc Summer School on Learning Systems, Computational Intelligence and Learning Doctoral School. I am occasionally involved in **professional training programs** through Inria Academy.

Current courses (see [\[link\]](#) for full list):

- **Privacy Preserving Machine Learning**, *Master 2 Data Science*, Université de Lille.
- **Introduction to Privacy Preserving Machine Learning**, École Centrale de Lille.

Institutional responsibilities

2019–present Member of the COERLE, the national body addressing the legal and ethical issues in connection with the research and experimentation conducted at Inria.

Services to the scientific community

Editorial activities

- **Area chair** of the *Annual Conference on Neural Information Processing Systems* (NeurIPS) since 2020, the *International Conference on Machine Learning* (ICML) since 2019 and the *International Conference on Artificial Intelligence and Statistics* (AISTATS) since 2022.
- **Action editor** of *Transactions on Machine Learning Research* since 2022.

Organization of scientific events

- **I co-organize the Federated Learning One World webinar** (1000+ registered attendees).
- **I co-organized several highly-visible international workshops and tutorials** at top conferences (ECML/PKDD 2015, NIPS 2016, NeurIPS 2018, NeurIPS 2020, CCS 2021, FOCS 2022), as well as stand-alone international and national workshops, see [\[link\]](#).

Peer review

- **International journals** such as *Journal of Machine Learning Research*, *Machine Learning Journal*, *Transactions on Pattern Analysis and Machine Intelligence*, *Neurocomputing*.
- **International conferences** such as *NeurIPS*, *ICML*, *AISTATS*, *IJCAI*, *SaTML*.
- **International workshops**, see [\[link\]](#) for details.

Scientific expertise

- **Member of the CNIL-Inria Privacy Award committee** (2022).
- **Member of Gilles-Kahn PhD award committee** of the French Society of Computer Science (SIF), sponsored by the French Academy of Sciences (2018-2020).
- **Remote referee for the European Research Council (ERC)**, Starting Grant call, 2022.
- **Reviewer for the French National Research Agency (ANR)**, 2018, 2021.
- **Reviewer for the Hi! Paris Fellowship Program**, 2021.
- **Member of 2 tenured researcher recruiting committees** (Inria Lyon 2022, Inria Paris 2023).
- **Member of 5 assistant professor recruiting committees** (Télécom Saint-Etienne x3, ENS Lyon, Aix-Marseille Univ.).
- **Reviewer of 2 PhD theses** (ENS Paris x1, PSL x1).
- **Member of 13 PhD committees** (Télécom Paris x4, Sorbonne Univ. x2, Univ. Paris-Saclay x2, IP Paris x1, Univ. Grenoble x1, Univ. Rennes x1, Univ. Côte d'Azur x1, INSA Lyon x1).

Software development

metric-learn Core contributor and maintainer of `metric-learn`, a metric learning package in Python compatible with `scikit-learn`. 1000+ stars and 200+ forks on GitHub.

scikit-learn Occasional contributor to `scikit-learn`, a prominent machine learning library in Python.

Other Open-source implementations of my research work are publicly available, see [\[link\]](#).

Selected invited talks

2023 Workshop on Decentralized Federated Learning

2022 Workshop on Ethical AI

2022 CIRM Conference on Learning and Optimization

2022 Conférence Française d'Apprentissage (CAp)

- 2022 53e Journées de Statistique (JDS)
- 2021 Federated Learning Workshop
- 2020 International Workshop and Privacy and Data Anonymization
- 2019-2022 Google Workshops on Federated Learning and Analytics
- 2020 International Workshop on Distributed Cloud Computing
- 2020 CIRM Workshop on Optimization for Machine Learning
- 2020 Applied Machine Learning Days (AMLD)
- 2019 International Workshop on Machine Learning & Artificial Intelligence
- 2019 CIFAR-UKRI-CNRS workshop on AI & Society: From principles to practice
- 2019 Workshop “The power of graphs in machine learning and sequential decision making”
- 2019 Workshop “Graph signals: learning and optimization perspectives”
- 2017 DALI 2017 Workshop on Fairness and Privacy in Machine Learning
- 2015 ICML 2015 Workshop on greedy methods for sparse machine learning

Science outreach

- 2022 Panel discussion at the *Séminaire Critique de l'Intelligence Artificielle* (ENS Paris-Saclay) on conflicts of interest and misinformation in AI research [\[link\]](#).
- 2022 Interview by *CNIL* (the French Data Protection Authority) on federated learning [\[link\]](#).
- 2022 Panel discussion on the protection of voice data organized by *Hub France IA* [\[link\]](#).
- 2021 Article on the automatic analysis of *Grand Débat National* data in *Le Monde's* blog *Binaire* [\[link\]](#) and *The Conversation* [\[link\]](#).
- 2020 Interview for an article about federated learning in the *Data Analytics Post* [\[link\]](#).
- 2020 Interview for an article about personal data collection in social networks and apps in *Science et Vie junior* magazine (n°370).
- 2020 Participation to a local radio show on algorithms, big data and privacy on *Radio Dio* [\[link\]](#).
- 2019 Article on AI and transparency in the French daily newspaper *Libération* [\[link\]](#).
- 2018 Scientific expertise for the short TV series *Dopamine* of the national channel *Arte*, which explains how popular apps get their users hooked while collecting their personal data [\[link\]](#).
- 2017 Interview about AI during *Fête de la Science* (Cité des sciences, Paris) [\[link\]](#).