

Aurélien Bellet

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Positions

- 2015–present** **Permanent Research Scientist (CRCN)**, *Inria*, Lille, France.
Inria is the French Institute for Research in Computer Science and Automation.
- 2019–present** **Invited Associate Professor**, *Télécom Paris*, Paris, France.
Télécom Paris is a top-tier French public institution of higher education and research in computer science and engineering.
- 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

- 2009–2012** **Ph.D. in Computer Science and Engineering**, *Laboratoire Hubert Curien UMR CNRS 5516, Université Jean Monnet*, Saint-Etienne, 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*, Edinburgh.
◦ Major: Learning from Data. Done concurrently with my 1st year of PhD.
- 2007–2009** **MSc in Computer Science**, *Université Jean Monnet*, Saint-Etienne.
◦ 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 and decentralized optimization algorithms, privacy-preserving machine learning, metric and representation learning, statistical learning theory, as well as applications to speech recognition and natural language processing. I have published **12 papers in international journals**, **27 papers in international peer-reviewed conferences** and **1 book** (Morgan & Claypool), see [\[link\]](#) for a detailed list of publications. As of February 2021, my work has been cited 2000+ times and my h-index is 16 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.

Grants and involvement in research projects

- As Principal Investigator**
- **PRIDE** (2021-): Privacy-Preserving Decentralized Machine Learning.
 - **FLAMED** (2020-): Federated Learning and Analytics on Medical Data.
 - **PAD-ML** (2018-): Privacy-Aware Distributed Machine Learning (Inria associate team with the Alan Turing Institute, UK).
 - **SkMetricLearn** (2017-2019): Scikit-learn Integrated Metric Learning.
 - **LEGO** (2016-): Learning Good representations for natural language processing (Inria associate team with Fei Sha's group at USC).
- As Project Member** I have been involved in several research projects funded by France (ANR), the US (IARPA) and Europe (H2020, ICT), see [\[link\]](#) for a detailed list.

Supervision

- Postdocs** M. Maouche (2019-), M. Ailem (2017-2018, Inria@SiliconValley fellowship).
- Ph.D. students** P. Mangold (2020-), M. Asadi (2018-), B. Mohan Lal Srivastava (2018-), M. Vargas Vieyra (2018-), R. Vogel (2017-2020, CIFRE thesis).
- Engineers** 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** E. Cyffers (ENS Lyon, 2020), P. Mangold (ENS Lyon, 2019), A. Capriski (University of Lille, 2018), A. d'Azémar (University of 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 universities and top-tier French engineering schools. I also gave **lectures at international research schools**: Computational Intelligence and Learning Doctoral School, Pre-doc Summer School on Learning Systems (organized by the Max Planck Institute and ETH Zurich), Winter School on Distributed Systems and Networks, Research School on Uncertainty in Scientific Computing and Federated Learning Winter School.

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

- **Privacy Preserving Machine Learning**, *Master 2 Data Science*, Université de Lille.
- **Machine Learning**, *Data Analysis & Decision making*, École Centrale de Lille.
- **Machine Learning**, *Certificat d'Études Spécialisées Data Scientist*, Télécom Paris.

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 and the International Conference on Machine Learning (ICML) since 2019.
- Organization of scientific events**
- **I co-organize the Federated Learning One World webinar** (700+ 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), as well as stand-alone international and national workshops. See [\[link\]](#) for details.

- 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* (formerly *NIPS*), *ICML*, *AISTATS*, *IJCAI*, *ECML/PKDD*.
 - **International workshops**, see [link] for details.
- Scientific expertise**
- **Member of Gilles-Kahn PhD award committee** of the French Society of Computer Science (SIF), sponsored by the French Academy of Sciences (2018-2020).
 - **Reviewer for the French National Research Agency** (ANR), 2018, 2021.
 - **Member of 6 PhD committees** (Télécom Paris x4, Sorbonne Université x2)
 - **Member of 4 assistant professor recruiting committee** (Télécom Saint-Etienne x2, ENS Lyon, Aix-Marseille Université).

Software development

- metric-learn** Core contributor and maintainer of `metric-learn`, a metric learning package in Python compatible with `scikit-learn`. Developed in part through the SkMetricLearn project funded by Inria (2017-2019), of which I was PI. More than 1000 stars and 200 forks on GitHub.
- scikit-learn** Occasional contributor to `scikit-learn`, a prominent machine learning library in Python.
- Misc.** Open-source implementations of my work are publicly available on GitHub and mloss [link].

Selected invited talks

- 2020 Federated Learning Winter School, virtual event.
- 2020 Google Workshop on Federated Learning and Analytics, virtual event.
- 2020 International Workshop on Distributed Cloud Computing, virtual event.
- 2020 Optimization for Machine Learning, Centre International de Rencontres Mathématiques (CIRM), Marseille (France).
- 2020 Applied Machine Learning Days, Lausanne (Switzerland).
- 2019 International Workshop on Machine Learning & Artificial Intelligence, Télécom Paris (France).
- 2019 Workshop on Federated Learning and Analytics, Google Research Seattle (USA).
- 2019 CIFAR-UKRI-CNRS workshop on AI & Society: From principles to practice, Alan Turing Institute, London (UK).
- 2019 Workshop “The power of graphs in machine learning and sequential decision making”, University College London (UK).
- 2019 Workshop “Graph signals: learning and optimization perspectives”, University of Montpellier (France).
- 2017 DALI 2017 Workshop on Fairness and Privacy in Machine Learning, Tenerife (Spain).
- 2015 ICML 2015 Workshop on greedy methods for sparse machine learning, Lille (France).

Science outreach

- 2019 Article on AI and transparency in the French daily newspaper *Libération* [link].
- 2018 Scientific expertise for Dopamine, a short TV series for 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].