✉ *othmane.marfoq@inria.fr*
🌐 *omarfoq.github.io/*
ꝏ *Othmane Marfoq*
🐦 *MarfoqOthmane*
in *othmane-marfoq*
○ *omarfoq*

Othmane Marfoq

Research Interest

My research interest lies in providing theoretical understanding of federated learning systems. Inspired by the theoretical insights, I seek to design large-scale distributed/federated learning algorithms that can efficiently exploit data and system resources, with a specific attention to fairness and robustness. My research is characterized by the application of mathematical tools from distributed optimization and statistical learning theory.

Education

2020–present **Ph.D. in computer science**, *Sophia-Antipolis, France*, Inria, Université Côte d'Azur
Advisor: Giovanni Neglia
Thesis: Tackling Heterogeneity in Federated Learning Systems
Funding: Accenture Labs
Anticipated graduation: September 2023

2018–2019 **MS, MVA: Mathematics, Computer Vision, Machine Learning**, *ENS Paris-Saclay*, Cachan, France

2016–2019 **MS, Applied Mathematics**, *ENSTA Paris*, Palaiseau, France

2014–2016 **Classes Prépas**, *Lycée Ibn-Abdoun*, Khouribga, Morocco

---

Publications

Othmane Marfoq, Giovanni Neglia, Laetitia Kameni, and Richard Vidal. Federated learning for data streams. *arXiv preprint arXiv:2301.01542*, 2023.

Angelo Rodio, Francescomaria Faticanti, **Othmane Marfoq**, Giovanni Neglia, and Emilio Leonardi. Federated learning under heterogeneous and correlated client availability. In *IEEE INFOCOM 2023*, 2023.

Jean Ogier du Terrail, Samy-Safwan Ayed, Edwige Cyffers, Felix Grimberg, Chaoyang He, Regis Loeb, Paul Mangold, Tanguy Marchand, **Othmane Marfoq**, Erum Mushtaq, et al. Flamby: Datasets and benchmarks for cross-silo federated learning in realistic healthcare settings. In *Thirty-sixth Conference on Neural Information Processing Systems Datasets and Benchmarks Track*.

Othmane Marfoq, Giovanni Neglia, Laetitia Kameni, and Richard Vidal. Personalized federated learning through local memorization. In *Proceedings of the 39th International Conference on Machine Learning*, Proceedings of Machine Learning Research. PMLR, 2022.

Othmane Marfoq, Giovanni Neglia, Aurélien Bellet, Laetitia Kameni, and Richard Vidal. Federated multi-task learning under a mixture of distributions. In *Advances in Neural Information Processing Systems*, volume 34, 2021.

Othmane Marfoq, Chuan Xu, Giovanni Neglia, and Richard Vidal. Throughput-optimal topology design for cross-silo federated learning. In *Advances in Neural Information Processing Systems*, volume 33, 2020.

Work Experience

2019 **Research Intern**, *Smiths Detection*, Vitry-sur-Seine, France

2018 **Research Intern**, *Lixoft*, Antony, France

Teaching

2023 Machine Learning: Theory and Algorithms (MALTA), **3 hours** (1 lecture)

2022 Optimization for Machine Learning, **15 hours** (2 lectures + 3 practical sessions)

2021 Machine Learning: Theory and Algorithms (MALTA), **3 hours** (1 lecture)

2021 Optimization for Machine Learning, **12 hours** (4 practical sessions)

2020 Distributed Optimization and Games, **6 hours** (2 practical session)

Oral Presentations

2022 **SophI.A summit**, *Federated Learning for Data Streams*

2022 **GDR RSD thematic day on distributed learning**, *Personalized Federated Learning through Local Memorization*

2021 **FL-ICML'21**, *Federated Multi-Task Learning under a Mixture of Distributions*

2020 **SophI.A summit**, *Throughput-Optimal Topology Design for Cross-Silo Federated Learning*

Service and Activities

I am serving/served as reviewer for: International Conference on Artificial Intelligence and Statistics (AISTATS'22), International Conference on Machine Learning (ICML'22), Neural Information Processing Systems (NeurIPS'22, **Top reviewer**), IEEE Transactions on Mobile Computing