Luca **Corbucci**

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About Me

Computer Science PhD candidate focused on **Fairness**, **Privacy**, and **XAI** for **Federated Learning**, with 5+ publications in venues including **FAccT** and **ECAI**. Proven ability to bridge theory and practice via collaborations with **Telefónica Research Lab** and **Johannes Gutenberg-Universität Mainz**. Experienced public speaker, community builder (FOSDEM AI Devroom, Superhero Valley, Pisa.dev), and **podcaster** (250+ episodes).

Education

University of Pisa
Pisa, Italy

PhD in Computer Science - **Advisors:** Prof. A. Monreale and Dr. N. Kourtellis. - **Final Grade:** Summa Cum Laude   *Nov. 2021 - Jul. 2025*

- Developed methodologies to ensure privacy and fairness in Federated Learning models, addressing key challenges in **safe and ethical AI**.
- Explored and designed techniques for explainable Federated Learning (**XAI for FL**) to enhance model transparency and trust.
- Started collaboration with **Telefonica Research Lab** (1-year visit) and **Johannes Gutenberg-Universität Mainz**.
- Partially funded and supported by the Horizon Europe project "TANGO".

University of Pisa
Pisa, Italy

M.Sc. in Computer Science - **Final Grade:** 110/110 Cum Laude   *Oct. 2018 - Jun 2021*

- **Thesis:** "Semantic enrichment of XAI explanations for healthcare". [**Paper** | **Code**].
- Spent a semester at **Technical University of Munich** thanks to the Erasmus+ study program.

University of Pisa
Pisa, Italy

B.Sc. in Computer Science   *Sep. 2014 - Oct. 2018*

- **Thesis:** "Construction and Analysis of the Ethereum Transaction Graphs". [**Code**].

Work Experience

Telefónica R&D - System AI Lab
Barcelona, Spain

Research Intern - Supported by the SPATIAL H2020 EU project and supervised by Dr. Nicolas Kourtellis   *Mar. 2023 - Mar. 2024*

- Designed PUFFLE, a privacy-preserving **Federated Learning** method achieving 75% fairness improvement with minimal (22%) accuracy loss.
- Integrated fairness constraints based on practitioner requirements, bridging the gap between theoretical fairness and real-world systems.
- **Paper** accepted at the European Conference on Artificial Intelligence (**ECAI**) 2024; **Patent** application submitted.

Selected Publications - Full list: Google Scholar

October 2025	**L. Corbucci, J. A. B. Legrottaglie, F. Spinnato, A. Monreale and R. Guidotti**, "*An Interpretable Data-Driven Unsupervised Approach for the Prevention of Forgotten Items*" - Accepted at European Conference on Artificial Intelligence (ECAI) 2025	*Bologna, Italy*
Jun 2025	**L. Corbucci, X. Heilmann, M. Cerrato**, "*Benefits of the Federation? Analyzing the Impact of Fair Federated Learning at the Client Level*" - Accepted at ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2025	*Athens, Greece*
Jun 2025	**V. Bonsignori, L. Corbucci, F. Naretto, A. Monreale**, "*Differentially Private FastSHAP for Federated Learning Model Explainability*" - Accepted at International Joint Conference on Neural Networks (IJCNN) 2025	*Rome, Italy*
Oct 2024	**L. Corbucci, M. Heikkilä, D. Noguero, A. Monreale, N. Kourtellis**, "*PUFFLE: Balancing Privacy, Utility, and Fairness in Federated Learning*" - Accepted at European Conference on Artificial Intelligence (ECAI) 2024	*Santiago de Compostela, Spain*
Oct 2023	**L. Corbucci, A. Monreale, C. Panigutti, M. Natilli, S. Smiraglio, D. Pedreschi**, "*Semantic enrichment of explanations of AI models for healthcare*" - Accepted at International Conference on Discovery Science 2023	*Porto, Portugal*
Jul 2023	**L. Corbucci, R. Guidotti, A. Monreale**, "*Explaining Black-Boxes in Federated Learning*" - Accepted at World Conference on Explainable Artificial Intelligence	*Lisbon, Portugal*

Community & Leadership

Superhero Valley
Pisa, Italy

Co-founder and Community Manager   *Oct. 2020 - Ongoing*

- Co-founded a community of **2000+** computer scientists supported by big-tech employees and Italian universities
- Supervised a team of **5** helpers in organising community activities and events.
- **80+** community members got internships or full-time positions in Big Tech companies thanks to our activities.

PointerPodcast
Pisa, Italy

Co-Creator and Podcaster   *May. 2019 - Ongoing*

- Co-created a podcast with **250+** episodes, **70+** guests from industry and academia, and **40k+** total listens.