

Luca Corbucci

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About Me

Computer Science PhD with a research focus on AI Safety, specifically on **Fairness**, **Privacy**, and **Explainable AI** for **Federated Learning**. Authored 5+ publications in top-tier venues, including **FACCT** and **ECAI**. Proven leader and collaborator: successfully initiated a 1-year research internship with **Telefónica Research Lab** and projects with **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

Oct 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.