

### Research Interests

My research aims to understand how probabilistic information produced by machine-learning models can be made trustworthy and translated into better decisions. I develop methods for uncertainty quantification and reliable decision-making that make predictive systems more accurate, robust, and informative.

### Academic Experience and Education

2023–Present **PhD in Artificial Intelligence**, *University of Pisa*

Research on uncertainty quantification, reliable machine learning and human–AI decision-making

2020–2022 **MSc in Data Science**, *University of Trento*, Grade: 110/110 cum laude

with thesis: Exploiting Impact versus posterior in machine learning: an exploratory study. Advisors: Professor Andrea Passerini, Professor Katya Tentori

2017–2020 **BSc in Economics and Management**, *University of Trento*, Grade: 109/110

with thesis: COVID-19: A Critical and Empirical Analysis of Fatality in Relation to Age and Gender. Advisor: Professor Giuseppe Espa

### Industrial Experience

02/2022– **Data Scientist Intern**, *Reale Mutua Assicurazioni, Milan*

06/2022 Data cleaning and exploratory analysis of insurance and climate-related risk data, to identify patterns in weather-related vehicle accidents to support improved risk assessment and policy design.

### Grants and Research Projects

2023–Present **National PhD Scholarship in Artificial Intelligence**

2023–Present **TANGO – Horizon Europe**, *Grant Agreement No. 101120763*

Research on hybrid decision-making paradigms.

2023–Present **FAIR – Spoke 2: Human-centric AI**

Research on interpretable and trustworthy machine learning under the supervision of Professor Andrea Passerini.

### Papers (more on [Google Scholar](#))

- [1] **C. Barbera**, L. Stradiotti, L. Cascioli, L. Perini, N. Tax, D. Haimovich, J. Davis, A. Passerini, A. Pugnana. *A CaLLM Judge is a Better Judge: Mitigating Bias in LLM-as-a-Judge*. Under review at ICLR 2027.
- [2] C. Giacchetta, A. Bogani, **C. Barbera**, G. De Toni, M. Caprio, A. Pugnana, A. Passerini. *Should I Stay or Should I Show? Learning to Selectively Disclose Information*. Under review at ICLR 2027.
- [3] **C. Barbera**, L. Perini, G. De Toni, A. Passerini, A. Pugnana. *Divide et Calibra: Multiclass Local Calibration via Vector Quantization*. NeurIPS 2026.
- [4] **C. Barbera**, L. Perini, G. De Toni, A. Passerini, A. Pugnana. *Multiclass Local Calibration with the Jensen–Shannon Distance*. AISTATS 2026.
- [5] I. B. Schlicht, B. Sayin, Z. Zhao, F. M. Labonté, **C. Barbera**, M. Viviani, P. Rosso, L. Flek. *Zoom In Disparities in Healthcare LLM Q&A*. NLDB 2026.

### Academic and Research Activities

Reviewer for ECMLPKDD 2026, ICLR 2027; evaluator for the ELLIS PhD Program pre-screening, 2026.

Supervisor of 1 Master Thesis.

### Projects

Implementations of my research papers is open – [github.com/Cesbar99](https://github.com/Cesbar99).

### Programming and Software Skills

Python (PyTorch, TensorFlow, scikit-learn, NumPy, Pandas), R, SQL, L<sup>A</sup>T<sub>E</sub>X, Git.