Chiara Bellatreccia

Birth: 20 August 2000, Rome

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LinkedIn Profile

Work Experience

Research Fellow - Department of Science, Informatics and Engineering of the University of Bologna. Supervisor: Prof. Michela Milano — *April 2025 - ongoing*, University of Bologna

AI Fairness: Tecnologia per la sperimentazione e l'innovazione

Engineering and development of an innovative experimental environment for 'AI Fairness', aimed at enabling the design, execution, and analysis of experiments based on a systematic factorial design approach.

Private Maths, Physics and Informatics teacher — *2019 - ongoing*

Front Office intern — *2018*, Comune di Imola

My responsibilities included managing public relations, carrying out cataloguing activities with Microsoft Office and communicating with other employees.

Education

Master's Degree in Artificial Intelligence — *2022 - March 2025*

Final grade: *110/110 with honors* — Alma Mater Studiorum - University of Bologna

Master's Thesis in Ethics in Artificial Intelligence as part of the AEQUITAS project: *Bias Mitigation in Skin Disease Classification.*

Bachelor's Degree in Physics — *2019 - 2022*

Final grade: *110/110 with honors* — Alma Mater Studiorum - University of Bologna

High School Diploma in Scientific Studies — *2014 - 2019*

Final grade: *100/100* — Liceo Scientifico Rambaldi Valeriani - Imola

Projects

Team Member – EU Horizon 2020 AEQUITAS Project (G.A. 101070363) — *2024 - ongoing*, University of Bologna

https://cordis.europa.eu/project/id/101070363

Research project: AEQUITAS – Assessment and engineering of equitable, unbiased, impartial and trustworthy AI systems.

- Medical image synthesizer for data augmentation in a pediatric dermatology dataset
- Urban Digital Twin of the city of Bologna.

Scientific Activities

My Research Profile

I am a computer scientist specialized in Artificial Intelligence, with a focus on the detection and mitigation of bias. My research began with my Master's thesis, which explored bias reduction in the automated diagnosis of dermatological diseases using non-dermoscopic images. This work resulted in two peer-reviewed publications: one presented as a poster at AAAI-2025 in Philadelphia, where I introduced a methodology for analyzing bias in skin disease diagnosis, and another presented at the AIMMES Workshop in Barcelona, where I proposed a synthetic data augmentation pipeline to address both bias and data scarcity. More recently, I have delved into the Urban Digital Twin project of the city of Bologna, contributing to the preparation of a review paper on the state-of-the-art of Urban Digital Twins in the literature.

Awards

European Commission's Innovation Radar. Key Innovator. AEQUITAS Skin disease image generator for different skin shades. *CNET 2025*

Talks

Addressing Bias and Data Scarcity in AI-Based Skin Disease Diagnosis with Non-Dermoscopic Images - 2nd ENFIELD Webinar Bias in Medical AI: Identifying Risks and Ensuring Fairness *23 May 2025*

https://aimas.cs.pub.ro/2ndenfieldwebinar/

Addressing Bias and Data Scarcity in AI-Based Skin Disease Diagnosis with Non-Dermoscopic Images - AIMMES Workshop, 2nd AI Fairness Cluster Conference *20 March 2025*

https://ai-fairness-cluster.zohobackstage.com/AIFairnessClusterConference2025#/agenda?day=1&lang=en&sessionId=148470000000420013

Addressing Fairness in AI-Driven Dermatological Diagnosis Using Non-Dermoscopic Images: A Methodology for Bias Detection - AAAI-2025 *4 March 2025*

Poster presentation

Publications

- Chiara Bellatreccia, Andrea Borghesi, Roberta Calegari, **Addressing Bias and Data Scarcity in AI-Based Skin Disease Diagnosis with Non-Dermoscopic Images**, presented at the *AIMMES Workshop* in conjunction with the *2nd AI Fairness Cluster Conference* in Barcelona, Spain. Published with CEUR.

  https://ceur-ws.org/Vol-3961/paper8.pdf

- Chiara Bellatreccia, Andrea Borghesi, Roberta Calegari, **Addressing Fairness in AI-Driven Dermatological Diagnosis Using Non-Dermoscopic Images: A Methodology for Bias Detection**, presented as a poster at the *9th International Workshop on Health Intelligence*, in conjunction with the *39th*

AAAI Conference on Artificial Intelligence, Philadelphia, PA, USA. To appear in *Studies in Computational Intelligence*, Springer.

Language Skills

Italian

Mother tongue

English

Listening: C1
Reading: C1
Writing: C1
Spoken production: C1
Spoken interaction: C1

Spanish

Listening: B1
Reading: B1
Writing: B1
Spoken production: B1
Spoken interaction: B1

Digital Skills

Programming Languages: I have a solid knowledge of **Python**. I am also proficient in **C++**. Essential knowledge of Prolog.

Python Libraries: I use Pandas, NumPy, ScikitLearn, Matplotlib, Seaborn, Pytorch, Tensorflow, Keras, Huggingface and OpenCV on a daily basis.

Operating Systems: good familiarity with both **Windows** and **Linux**. Basic knowledge of **Virtual Machines**.

Collaboration Tools: I have familiarity with Git, **GitHub**, GitLab and I know how to employ these tools for collaboration purposes.

Containers: I have basic knowledge of **Docker**, as I made use of it for some previous academic projects.

Other: experienced in LaTeX, Microsoft Office. Good knowledge of ROOT, Labview.

In particular, I am proficient in **Machine Learning**, **Data Analysis and Processing**, **Data Visualization**, **Deep Learning**, **Computer Vision** and **Natural Language Processing**, both on a theoretical and practical level.

I authorize the processing of my personal data pursuant to Legislative Decree 101/2018 and art. 13 GDPR (EU Regulation 2016/679) for the purposes of personnel research and selection.

Bologna, July 17, 2025
Chiara Bellatreccia