Lorenzo **Baraldi**

PH.D. STUDENT IN AI

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Summary

I am currently an Artificial Intelligence Researcher specializing in Computer Vision architectures. With a strong work ethic and a passion for challenges, I thrive in competitive environments and am relentless in solving complex bugs. Continuously seeking to expand my expertise, I actively pursue opportunities to learn new technologies and approach problems from diverse perspectives, aiming to enhance my knowledge and drive innovation.

Technical Skills

AI-ML frameworks	Pytorch, Numpy, Pandas, Slurm
Programming	Python
Open Source contributions	pytorch-image-models
Languages	Italian (native), English (C1)

Non-technical Skills

Leadership	Gained as a top junior volleyball player

Work

University of Pisa — *Modena, Italy*

PH.D. STUDENT IN ARTIFICIAL INTELLIGENCE — *Nov. 2022 - Now*

- Research on Computer Vision, self-supervised pre-training methods for Vision Transformer
- Research on Deepfake detection
- Research on evaluation of text-to-image models

AImageLab, University of Modena and Reggio Emilia — *Modena, Italy*

AI RESEARCHER INTERN — *Feb. 2022 - Nov. 2022*

- Research on Computer Vision, self-supervised pre-training methods on Vision Transformer

Projects

ELSA: European Lighthouse on Secure and Safe AI — *Europe*

AI RESEARCHER — *Nov. 2022 - Now*

- European-founded project in which I am in charge of creating and managing a challenge for Deepfake detection.

Prometeia s.p.a & DAT Italia s.r.l — *Bologna, Italy*

AI RESEARCHER — *Nov. 2021 - Feb. 2022*

- Car damage projection from 2D images to 3D model
- Provided pipeline to create a 3D digital twin of a damaged vehicle.

Education

UNIMORE (University of Modena and Reggio Emilia) — *Modena, Italy*

MASTER'S DEGREE IN COMPUTER ENGINEERING (SPECIALIZATION ARTIFICIAL INTELLIGENCE) — *Oct. 2020 - Oct. 2022*

- Grade: 110/110 with honors
- Machine Learning
- Computer Vision
- Deep Learning
- Natural Language Processing

UNIMORE (University of Modena and Reggio Emilia) — *Modena, Italy*

BACHELOR'S DEGREE IN COMPUTER ENGINEERING — *Sep. 2017 - Oct. 2020*

- Grade: 110/110 with honors
- Started building a structure to my IT skills

Publications

2023	Lorenzo Baraldi*, Roberto Amoroso*, Marcella Cornia, Lorenzo Baraldi, Andrea Pilzer, Rita Cucchiara "**Learning to Mask and Permute Visual Tokens for Vision Transformer Pre-Training**"	*Under review, CVIU*
2023	Federico Cocchi*, Lorenzo Baraldi*, Samuele Poppi, Marcella Cornia, Lorenzo Baraldi, Rita Cucchiara "**Unveiling the Impact of Image Transformations on Deepfake Detection: An Experimental Analysis**"	*ICIAP, Oral*
2023	Federico Betti, Jacopo Staiano, Lorenzo Baraldi, Lorenzo Baraldi, Rita Cucchiara, Nicu Sebe "**Let's ViCE! Mimicking Human Cognitive Behavior in Image Generation Evaluation**"	*ACM Multimedia BNN, Oral*
2024	Davide Caffagni*, Federico Cocchi*, Luca Barsellotti*, Nicholas Moratelli*, Sara Sarto*, Lorenzo Baraldi*, Lorenzo Baraldi, Marcella Cornia, Rita Cucchiara "**The (R)Evolution of Multimodal Large Language Models: A Survey**"	*ACL Findings*
2024	Lorenzo Baraldi*, Federico Cocchi*, Lorenzo Baraldi, Marcella Cornia, Rita Cucchiara "**Contrasting Deepfakes Diffusion via Contrastive Learning and Global-Local Similarities**"	*Under review*
2024	Federico Betti*, Lorenzo Baraldi*, Brandon Willy Viglianisi, Lorenzo Baraldi, Rita Cucchiara, Nicu Sebe "**Hallucination Early Detection in Diffusion Models**"	*Under review*
2024	Silvia Cappelletti*, Lorenzo Baraldi*, Federico Cocchi, Marcella Cornia, Lorenzo Baraldi, Rita Cucchiara "**Adapt to Scarcity: Few-Shot Deepfake Detection via Low-Rank Adaptation**"	*Under review*

Honors & Awards

2020-21-22-23	**Winner**, "University of Modena and Reggio Emilia" top students award	*Modena, Italy*
2017	**Winner**, "Cavalieri del Lavoro" top students award	*Emilia Romagna, Italy*
2013-14-17-18-21-23	**Winner**, "Cassa di risparmio di Carpi" top students award	*Carpi, Italy*

Reviews

ICIAP 2023	Reviewed 2 papers for the main conference
ICCV Workshop 2023	Reviewed 4 papers for the DeepFake Analysis and Detection (DFAD) workshop
CVPR Workshop 2024	Reviewed 3 papers for the DeepFake Analysis and Detection (DFAD) workshop
ECCV 2024	Reviewed 3 papers from the main conference
ACM Multimedia 2024	Reviewed 5 papers from the main conference

General Interests

Volleyball	I played volleyball and won 1 National Junior League championship, 1 silver medal in the 2016 National Junior championship, 1 bronze medal in the 2017 National Junior championship(co-captain)
Private Teaching	Helping other students is important to me, plus it's a way to always keep updated maths and basic coding (Super prof platform)
Guitar playing	Acoustic-Classic guitar and cover