Lorenzo **Agnolucci**

Ph.D. Candidate

Florence, Italy

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Summary

Dedicated Ph.D. candidate (thesis submitted, awaiting defense) in **Computer Vision** and Artificial Intelligence with a strong background in **low-level vision** and **vision-language models**. Experienced in conducting cutting-edge research independently and as part of a **collaborative team** in academia and **industry**, with a **proven track record** of publishing high-quality research in **top-tier venues**. Proficient in **Python** and **PyTorch**, with strong analytical, problem-solving, and communication skills. Highly motivated to contribute to innovative projects and eager to apply expertise to advance knowledge and technology in both exploratory and applied research settings.

Education

University of Florence — *Florence, Italy*

PH.D. IN COMPUTER VISION AND ARTIFICIAL INTELLIGENCE — *Nov. 2021 - Nov. 2024*

- Research areas: low-level vision, vision-language models, image quality assessment, video restoration
- Supervisor: Prof. Marco Bertini
- Thesis defense date: Spring 2025

University of Florence — *Florence, Italy*

M.SC. IN COMPUTER SCIENCE AND ENGINEERING — *Sep. 2019 - Sep. 2021*

- Thesis: Deep Learning Techniques for Improving Video Visual Quality Using Keyframes
- Supervisors: Prof. Marco Bertini and Prof. Alberto Del Bimbo
- Grade: 110/110 cum laude
- Core focus: computer vision, deep learning, machine learning, image/video processing

University of Florence — *Florence, Italy*

B.SC. IN COMPUTER SCIENCE AND ENGINEERING — *Sep. 2016 - Sep. 2019*

- Thesis: Localization of Figures in Scientific Articles
- Supervisor: Prof. Simone Marinai
- Grade: 110/110 cum laude

Work Experience

SonyAI — *Tokyo, Japan*

RESEARCH INTERN — *Mar. 2024 - Nov. 2024*

- Conducted research on image quality assessment and low-level vision under the supervision of Vlad Hosu
- Co-organized a challenge and published a paper at the Advances in Image Manipulation workshop at ECCV2024
- Submitted a first-author paper related to image quality assessment to CVPR2025

Selected Publications

* Equal contribution. A comprehensive publication list is available on my Google Scholar profile.

V. Hosu*, **L. Agnolucci***, D. Iso, D. Saupe, *Image Intrinsic Scale Assessment: Bridging the Gap Between Quality and Resolution*, **(Under review at CVPR2025)**, 2024

L. Agnolucci, L. Galteri, M. Bertini, *Quality-Aware Image-Text Alignment for Real-World Image Quality Assessment*, Arxiv **(Under review at CVPR2025)**, 2024

M. Mistretta*, A. Baldrati*, **L. Agnolucci***, M. Bertini, A. Bagdanov, *Cross the Gap: Inter-modal CLIP Representations Are Superior for Intra-modal Tasks*, **(Under review at ICLR2025)**, 2024

L. Agnolucci*, A. Baldrati*, M. Bertini, A. Del Bimbo, *iSEARLE: Improving Textual Inversion for Zero-Shot Composed Image Retrieval*, Arxiv **(Under review at TPAMI)**, 2024

V. Hosu, M. Conde, **L. Agnolucci**, N. Barman, S. Zadtootaghaj, R. Timofte, et al., *AIM 2024 Challenge on UHD Blind Photo Quality Assessment*, European Conference on Computer Vision Workshop **(ECCVW)**, 2024

V. Hosu, **L. Agnolucci**, O. Wiedemann, D. Iso, D. Saupe, *UHD-IQA Benchmark Database: Pushing the Boundaries of Blind Photo Quality Assessment*, European Conference on Computer Vision Workshop **(ECCVW)**, 2024

L. Agnolucci, L. Galteri, M. Bertini, A. Del Bimbo, *ARNIQA: Learning Distortion Manifold for Image Quality Assessment*, Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision **(WACV Oral)**, 2024

L. Agnolucci, L. Galteri, M. Bertini, A. Del Bimbo, *Reference-based Restoration of Digitized Analog Videotapes*, Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision **(WACV)**, 2024

A. Baldrati*, **L. Agnolucci***, M. Bertini, A. Del Bimbo, *Zero-Shot Composed Image Retrieval with Textual Inversion*, International Conference on Computer Vision **(ICCV)**, 2023

L. Agnolucci*, A. Baldrati*, F. Todino, F. Becattini, M. Bertini, A. Del Bimbo, *ECO: Ensembling Context Optimization for Vision-Language Models*, International Conference on Computer Vision Workshop **(ICCVW)**, 2023

L. Agnolucci, L. Galteri, M. Bertini, A. Del Bimbo, *Perceptual Quality Improvement in Videoconferencing using Keyframes-based GAN*, IEEE Transactions on Multimedia **(TMM)**, 2023

Skills

Programming Python, Java, C++, C
Tools PyTorch, NumPy, OpenCV, scikit-learn, pandas, Git, Docker, bash
Languages Italian (native), English (fluent)

Selected Activities

Workshop Challenge Organizer *2024*

- Co-organized the UHD-IQA challenge, held in conjunction with the AIM workshop at ECCV2024, with over 100 registered participants
- Collaborated in the challenge design and decision-making, including defining objectives, evaluation criteria, and guidelines for participants
- Evaluated baseline models, assessed participant solutions and reviewed their corresponding reports

Open-Source Contributor *2024 - Ongoing*

- IQA-PyTorch (>2K stars): implemented IQA metrics developed in my research papers, fixed bugs, and updated documentation through merged pull requests. Ensured code quality and consistency by adhering to the repository's coding standards and style guidelines

Reviewer *2022 - Ongoing*

- Conferences: CVPR, ACM MM, ICPR, BMVC, ICMR
- Journals: Transactions on Image Processing, International Journal of Multimedia Information Retrieval

Achievements

2021 **First Ascent Participant,** Selected by Bending Spoons to participate in First Ascent, a three-day event celebrating Italy's top 20 Computer Science students, chosen from over 500 applicants *Milan, Italy*