Lorenzo **Agnolucci**

Ph.D. Graduate

Florence, Italy

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Summary

Dedicated Ph.D. graduate 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**, as demonstrated by open-source contributions, 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.

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
- Published a first-author paper related to image quality assessment at ICCV2025

Education

University of Florence *Florence, Italy*

Ph.D. in Computer Vision and Artificial Intelligence *Nov. 2021 - May 2025*

- Research areas: low-level vision, vision-language models, image quality assessment, video restoration
- Thesis: "Quality over Quantity: Enhancing and Assessing Image and Video Quality"
- Supervisor: Prof. Marco Bertini

University of Florence *Florence, Italy*

M.Sc. in Computer Science and Engineering *Oct. 2019 - Oct. 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 *Oct. 2016 - Oct. 2019*

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

Selected Publications

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

L. Agnolucci*, A. Baldrati*, M. Bertini, A. Del Bimbo, *iSEARLE: Improving Textual Inversion for Zero-Shot Composed Image Retrieval*, Transactions on Pattern Analysis and Machine Intelligence **(TPAMI)**, 2025

V. Hosu*, **L. Agnolucci***, D. Iso, D. Saupe, *Image Intrinsic Scale Assessment: Bridging the Gap Between Quality and Resolution*, International Conference on Computer Vision **(ICCV)**, 2025

M. Mistretta*, A. Baldrati*, **L. Agnolucci***, M. Bertini, A. Bagdanov, *Cross the Gap: Exposing the Intra-modal Misalignment in CLIP via Modality Inversion*, International Conference on Learning Representations **(ICLR)**, 2025

L. Agnolucci, L. Galteri, M. Bertini, *Quality-Aware Image-Text Alignment for Opinion-Unaware Image Quality Assessment*, **Arxiv**, 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, Flask
Languages Italian (native), English (fluent)

Selected Activities

Open-Source Contributor

2024 - Ongoing

- torchmetrics (>2K stars): implemented an IQA metric developed in one of my research papers via a merged PR. Wrote unit tests and documentation to ensure correctness and usability. Maintained code quality by following the repository's coding standards and style guidelines.
- IQA-PyTorch (>2K stars): implemented IQA metrics developed in my research papers, fixed bugs, and updated documentation through multiple merged PRs. Ensured consistency with the repository's coding practices.

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

Reviewer

2022 - Ongoing

- Conferences: CVPR, ICCV, ACM MM, ICPR, BMVC, ICMR
- Journals: TIP, JAIR, TMM, TOMM, IJMIR

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*