



Claudio Rota

Postdoctoral Researcher

Imaging and Vision Laboratory

Department of Informatics, Systems and Communication

University of Milano-Bicocca, Milan, Italy

claudio.rota@unimib.it

RESEARCH PROFILE

Postdoctoral researcher in image processing, computer vision, and deep learning at the Imaging and Vision Laboratory, Department of Informatics, Systems and Communication (DISCo), University of Milano-Bicocca, Italy. I hold a Ph.D. in Computer Science with a thesis on deep learning methods for video restoration. My current research focuses on hyperspectral imaging, with applications to image color correction and chromatic adaptation for accurate color reproduction under varying illumination conditions. Previous work includes video restoration and enhancement, diffusion models for video super-resolution, and deep learning for the detection, segmentation, and classification of buildings from street-level and satellite imagery.

Research interests Hyperspectral imaging; color correction and color constancy; video restoration and enhancement; low-light enhancement; generative models; remote sensing.

ACADEMIC POSITIONS

11/2025 – present	Postdoctoral Researcher <i>Imaging and Vision Laboratory, University of Milano-Bicocca, Italy</i> Algorithms for image color correction and chromatic adaptation using hyperspectral imaging.
11/2024 – 11/2025	Postdoctoral Researcher <i>Imaging and Vision Laboratory, University of Milano-Bicocca, Italy</i> Deep learning models for the detection, segmentation, and classification of buildings from street-level and satellite imagery.
04/2023 – 09/2023	Research Intern (visiting Ph.D. student) <i>Learning and Perception Team, Computer Vision Center (CVC), Barcelona, Spain</i> Generative models (diffusion models) for video super-resolution.
11/2021 – 11/2024	Ph.D. Student <i>Imaging and Vision Laboratory, University of Milano-Bicocca, Italy</i> Deep learning methods for video restoration.
05/2021 – 10/2021	Research Assistant <i>Imaging and Vision Laboratory, University of Milano-Bicocca, Italy</i> Deep learning models for image and video enhancement.
02/2019 – 06/2019	Research Intern <i>University of Milano-Bicocca, Italy</i> Tool for data loss detection in Android applications.

EDUCATION

2021 – 2024	Ph.D. in Computer Science <i>University of Milano-Bicocca, Italy</i> Thesis: <i>Deep learning methods for video restoration</i> . Development of deep learning techniques for the removal of video artifacts, such as compression artifacts, temporal flickering, and noise.
2019 – 2021	M.Sc. in Computer Science, 110/110 cum laude <i>University of Milano-Bicocca, Italy</i> Thesis: <i>Video restoration using convolutional neural networks</i> .
2016 – 2019	B.Sc. in Computer Science, 110/110 cum laude <i>University of Milano-Bicocca, Italy</i> Thesis: <i>Development and evaluation of an automatic test case generation technique for data loss problems in Android apps</i> .
2005 – 2011	High school diploma in Accounting and Programming, 74/100 <i>Giuseppe Parini Institute, Italy</i>

RESEARCH COLLABORATIONS WITH INDUSTRIAL PARTNERS

2026 – 2027	Multimodal spectral-RGB video pipeline for spatially varying reflectance, illuminant and uncertainty estimation with spatio-temporal color correction <i>Huawei Technologies Co., Ltd.</i>
2021 – 2022	User-specific contrast enhancement technology for mobile platforms <i>Huawei Technologies Co., Ltd.</i>

PUBLICATIONS

Journal articles

- [J1] Flavio Piccoli, **Claudio Rota**, Rajesh Kumar, and Gianluigi Ciocca. “PyTAGIT: a scalable and interactive human-in-the-loop tool for fast image annotation.” *Neural Computing and Applications*, 38(7): 226, 2026. [Scimago 2025: Q1]
- [J2] Rajesh Kumar, **Claudio Rota**, Flavio Piccoli, and Gianluigi Ciocca. “Deep learning for building attribute classification from street-view images for seismic exposure modeling.” *Applied Sciences*, 16(2): 875, 2026. [Scimago 2025: Q2]
- [J3] **Claudio Rota**, Marco Buzzelli, Simone Bianco, and Raimondo Schettini. “Scalable residual Laplacian network for HEVC-compressed video restoration.” *ACM Transactions on Multimedia Computing, Communications, and Applications*, 21(6): 1–22, 2025. [Scimago 2024: Q1]
- [J4] **Claudio Rota**, Flavio Piccoli, Rajesh Kumar, and Gianluigi Ciocca. “A high-resolution large-scale dataset for building segmentation from aerial imagery in northeastern Italy.” *Scientific Data*, 12: 1735, 2025. [Scimago 2024: Q1]
- [J5] **Claudio Rota**, Marco Buzzelli, Simone Bianco, and Raimondo Schettini. “A RNN for temporal consistency in low-light videos enhanced by single-frame methods.” *IEEE Signal Processing Letters*, 31: 2795–2799, 2024. [Scimago 2024: Q1]
- [J6] **Claudio Rota**, Marco Buzzelli, Simone Bianco, and Raimondo Schettini. “Video restoration based on deep learning: a comprehensive survey.” *Artificial Intelligence Review*, 56(6): 5317–5364, 2023. [Scimago 2022: Q1]

Conference papers

- [C1] **Claudio Rota**, Marco Buzzelli, and Joost van de Weijer. “Enhancing perceptual quality in video super-resolution through temporally-consistent detail synthesis using diffusion models.” In *European Conference on Computer Vision (ECCV)*, pp. 36–53, 2024. [CORE 2023: A*]
- [C2] Simone Zini, **Claudio Rota**, Marco Buzzelli, Simone Bianco, and Raimondo Schettini. “Shallow camera pipeline for night photography enhancement.” In *International Conference on Image Analysis and Processing (ICIAP)*, pp. 51–61, 2023. [GGS 2022: B]
- [C3] **Claudio Rota** and Marco Buzzelli. “MdVRNet: deep video restoration under multiple distortions.” In *Proceedings of the 17th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP)*, pp. 419–426, 2022. [CORE 2021: B]
- [C4] Oliviero Riganelli, Simone Paolo Mottadelli, **Claudio Rota**, Daniela Micucci, and Leonardo Mariani. “Data loss detector: automatically revealing data loss bugs in Android apps.” In *Proceedings of the 29th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA)*, pp. 141–152, 2020. [CORE 2020: A]

Workshop papers

- [W1] Marco Buzzelli, **Claudio Rota**, Simone Bianco, and Raimondo Schettini. “Enforcing temporal consistency for color constancy in video sequences.” In *International Workshop on Computational Color Imaging (CCIW)*, pp. 274–288, 2024.
- [W2] Simone Zini, **Claudio Rota**, Marco Buzzelli, Simone Bianco, and Raimondo Schettini. “Back to the future: a night photography rendering ISP without deep learning.” In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, pp. 1465–1473, 2023.
- [W3] Mirko Agarla, Luigi Celona, **Claudio Rota**, and Raimondo Schettini. “Quality assessment of enhanced videos guided by aesthetics and technical quality attributes.” In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, pp. 1533–1541, 2023.

Preprints

- [P1] **Claudio Rota**, Luca Cogo, Simone Bianco, and Raimondo Schettini. “Illuminant-adaptive 3D lookup tables for camera color correction.” *arXiv preprint arXiv:2607.11681*, 2026.

Conference abstracts

- [A1] Maria Teresa Artese, Elisa Varini, Isabella Gagliardi, Gianluigi Ciocca, Flavio Piccoli, **Claudio Rota**, Matteo Del Soldato, Silvia Bianchini, Chiara Scaini, Antonella Peresan, and Piero Brondi. “Validating crowdsourced building data: a statistical and expert approach.” *EGU General Assembly*, 2026.
- [A2] Maria Teresa Artese, Elisa Varini, Isabella Gagliardi, Gianluigi Ciocca, Flavio Piccoli, **Claudio Rota**, Matteo Del Soldato, Silvia Bianchini, Chiara Scaini, Antonella Peresan, and Piero Brondi. “A web platform for crowdsourced collection, processing, and visualization of exposure data on buildings.” *EGU General Assembly*, 2025.
- [A3] Maria Teresa Artese, Elisa Varini, Isabella Gagliardi, Gianluigi Ciocca, Flavio Piccoli, **Claudio Rota**, Matteo Del Soldato, Silvia Bianchini, Chiara Scaini, Antonella Peresan, and Piero Brondi. “A web application for crowdsourced collection and analysis of building exposure data.” *The 3rd Joint Conference on Statistics and Data Science in China*, 2025.

AWARDS AND HONORS

- 2026 **Best Student Paper Award** (€200), AIC 2026 Midterm Meeting, Florence, Italy.
- 2024 **3rd place** in both the “Quality Score” and “Execution Time” tracks (\$350 each), NTIRE 2024 Challenge on Night Photography Rendering, CVPR 2024, Seattle, USA.
- 2023 **1st place** in the “People’s Choice” track, NTIRE 2023 Challenge on Night Photography Rendering, CVPR 2023, Vancouver, Canada.
- 2020 **Distinguished Artifact Award**, 29th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2020), virtual event.

INVITED TALKS AND SEMINARS

Invited talks

- 2026 “Recent advances and open challenges in low-light image enhancement.” Invited speaker, Computational Color Imaging Workshop (CCIW 2026).
- 2022 “Visual media enhancement using CNNs.” Invited speaker, Computational Color Imaging Workshop (CCIW 2022).

Seminars

- 2025 “Temporal consistency in low-level video processing.” Seminar for the course *Visual Information Processing and Management*, M.Sc. in Computer Science, University of Milano-Bicocca, Italy.
- 2021 “Video restoration using CNNs.” Seminar for the course *Visual Information Processing and Management*, M.Sc. in Computer Science, University of Milano-Bicocca, Italy.

THESIS SUPERVISION

M.Sc. theses

- Hyperspectral imaging for fruit ripeness monitoring.
 - Comparative analysis of deep learning models for crack detection and segmentation in structural images.
 - Food classification using olfactory sensor data.
 - Solar panel detection and classification using neural networks.
- Programs: Computer Science; Data Science; Artificial Intelligence.

B.Sc. theses

- Snitcher: a geospatial pipeline for detecting discrepancies between cadastral cartography and satellite imagery.
 - Local illuminant estimation on video using single-image global methods.
 - Contrast correction methods for RGB digital images.
- Program: Computer Science.

TEACHING

10/2022 – 01/2023 **Adjunct Lecturer (fixed-term teaching contract)**
University of Milano-Bicocca, Italy
Laboratory sessions of the undergraduate course *Programming 1* (Computer Science).

Teaching assistant (tutor), University of Milano-Bicocca

2021 – 2027 **Programming 1**
A.Y. 2021/22, 2022/23, 2023/24, 2024/25, 2025/26, 2026/27

2020 – 2026 **Algorithms and Data Structures**
A.Y. 2020/21, 2023/24, 2024/25, 2025/26

2023 – 2024 **Advanced Machine Learning**
A.Y. 2023/24

2020 – 2021 **Operations Research and Resource Planning**
A.Y. 2020/21

2019 – 2020 **Programming 2**
A.Y. 2019/20

SKILLS

Research areas Deep learning, machine learning, data mining, text mining; image and video enhancement and restoration, classification, object detection, segmentation.

Programming Python, Java (advanced); C, C++, C#, MATLAB, R, JavaScript, PHP.

Frameworks PyTorch, Keras, scikit-learn; Spring.

Languages Italian (native); English (B2 in all CEFR skills).

OTHER PROFESSIONAL EXPERIENCE

10/2018, 10/2019 **Software Developer**
Databridge S.r.l., Italy
Web applications for travel agencies (2018) and electronic invoicing (2019), using PHP and the ScriptCase platform.

2012 – 2016 Non-academic positions: worker at VMC S.p.A. (06/2015 – 09/2016); warehouse worker at Agostani S.r.l. (10/2014 – 01/2015); travel agent at QCNS Cruise S.A.M. (04/2012 – 09/2014).

Milan, 14 October 2026