Raffaella Lanzarotti

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Short Biography

Raffaella Lanzarotti is an Associate Professor in the Department of Computer Science, where she teaches Computer Vision and Image Processing and is a co-founder of the Perceptual Computing and Human Sensing (PHuSe) Lab. She earned her Ph.D. in Computer Science from the University of Milan, Italy, in 2003. Her research focuses on the development of computational methods and deep learning models for physiological signal analysis, computer vision, and human behavior understanding, with applications in health monitoring, human–computer interaction, and well-being assessment. She has been involved in over ten AI and human sensing projects. Raffaella Lanzarotti has authored over 70 publications in international peer-reviewed journals and conferences. Since 2022, she has served as an Associate Editor for the IEEE Transactions on Emerging Topics in Computing.

Research projects coordinator

- **Stairway to elders: bridging space, time and emotions in their social environment for wellbeing**. Principal Investigator of a national project funded by Fondazione CARIPLO (€ 200.000).
- **Interpreting emotions: a computational tool integrating facial expressions and biosignals based shape analysis and Bayesian networks**. Scientific Coordinator for the University of Milan in a FIRB-funded project (€ 700.000)
- **BrainCap and BrainNet: An Affordable Integrated Solution for EEG Acquisition, Analysis, and BCI System Development**. Current Principal Investigator of a national project funded by MUR (€ 350.000),

Selected Scientific and Professional Roles

TECHNICAL PROGRAM COMMITTEE MEMBER

- 2013, 2014, 2015: Member of the scientific Committee of the International Conference on Pattern Recognition Applications and Methods (ICPRAM)
- 2016-present: Review editor for the journal "Robot and Machine Vision" of Frontiers in ICT.
- 2019-2021: Guest editor for the journal IEEE Transactions on Emerging Topics in Computing. Special Section on Assistive Computing Technologies for Human Well-Being.
- 2020: Chair of the track "Video Processing for Human Behavioral Analysis (VP-HBA)" in the conference "ACM Symposium on Applied Computing (SAC 2020)"
- 2022, 2023,2024, 2025: Chair of the track "Graph Models for Learning and Recognition Track (GMLR)" in the conference "ACM Symposium on Applied Computing"
- 2022: Member of the Program Committee of the 26th International Conference on Pattern Recognition (ICPR2022)
- 2022: Guest Editor for the journal IEEE Transactions on Emerging Topics in Computing. Special Section on Emerging Trends and Advances in Graph-Based Methods and Applications
- 2023-present: Associate Editor for the journal IEEE Transactions on Emerging Topics in Computing. Special Section on Emerging Trends and Advances in Graph-Based Methods and Applications

- 2024: Local Chair of the 18th European Conference on Computer Vision (ECCV 2024)
- 2025: Area Chair of the Forty-Second International Conference on Machine Learning (ICML 2025)
- Member of the International Association for Pattern Recognition (IAPR)
- Member of the italian association for the research in Computer Vision, Pattern Recognition and Machine Learning (CVPL)
- Member of the CINI Italian Lab on Artificial Intelligence e Intelligent System (AIIS - CINI)

Selected publications

[1] Giuseppe Boccignone, Donatello Conte, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "Enhancing rPPG pulse-signal recovery by facial sampling and PSD Clustering". In: *Biomedical Signal Processing and Control* 101 (2025), p. 107158.

[2] Jacopo Burger, Giorgio Blandano, Giuseppe Maurizio Facchi, and Raffaella Lanzarotti. "2S-SGCN: A two-stage stratified graph convolutional network model for facial landmark detection on 3D data". In: *Computer Vision and Image Understanding* 250 (2025), p. 104227.

[3] Giuseppe Maurizio Facchi, Giuliano Grossi, Alessandro D'Amelio, Francesco Agnelli, Chiarella Sforza, Gianluca Martino Tartaglia, and Raffaella Lanzarotti. "Graph Neural Networks for 3D facial morphology: Assessing the effectiveness of anthropometric and automated landmark detection". In: *Pattern Recognition Letters* (2025).

[4] Omar Ghezzi, Giuseppe Boccignone, Giuliano Grossi, Raffaella Lanzarotti, and Alessandro D'Amelio. "CliffPhys: Camera-Based Respiratory Measurement Using Clifford Neural Networks". In: *European Conference on Computer Vision*. Springer. 2024, pp. 221–238.

[5] Nicoletta Noceti, Simone Campisi, Alice Chirico, Vittorio Cuculo, Giuliano Grossi, Monica Michelotto, Francesca Odone, Andrea Gaggioli, and Raffaella Lanzarotti. "Predicting Engagement of Older People's Virtual Teams from Video Call Analysis". In: *International Journal of Human–Computer Interaction* (2024), pp. 1–12.

[6] Giuseppe Boccignone, Donatello Conte, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, Raffaella Lanzarotti, and Edoardo Mortara. "pyVHR: a Python framework for remote photoplethysmography". In: *PeerJ Computer Science* 8 (2022), e929.

[7] Donatello Conte, Giuliano Grossi, Raffaella Lanzarotti, Jianyi Lin, and Alessandro Petrini. "Analysis of a parallel MCMC algorithm for graph coloring with nearly uniform balancing". In: *Pattern Recognition Letters* (2021).

[8] Giuliano Grossi, Raffaella Lanzarotti, Paolo Napoletano, Nicoletta Noceti, and Francesca Odone. "Positive technology for elderly well-being: A review". In: *Pattern Recognition Letters* 137 (2020), pp. 61–70.

[9] Giuseppe Boccignone, Donatello Conte, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "Deep Construction of an Affective Latent Space via Multimodal Enactment". In: *IEEE Trans. Cognitive and Developmental Systems* 10.4 (2018), pp. 865–880. DOI: 10.1109/TCDS.2017.2788820.

[10] Giuliano Grossi, Raffaella Lanzarotti, and Jianyi Lin. "Orthogonal Procrustes Analysis for Dictionary Learning in Sparse Linear Representation". In: *PLOS ONE* 12.1 (2017), pp. 1–16. DOI: 10.1371/journal.pone.0169663.

[11] Giuliano Grossi, Raffaella Lanzarotti, and Jianyi Lin. "High-rate compression of ECG signals by an accuracy-driven sparsity model relying on natural basis". In: *Digital Signal Processing* 45 (2015), pp. 96–106. DOI: 10.1016/j.dsp.2015.06.006.