

ELENA CAMUFFO

AI & Graphics Research Scientist, Ph.D.

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WORK EXPERIENCE

University of Padova | Padova, Italy 2024 – Present

- *Postdoctoral Research Scientist.*
- Leading research in 3D Computer Vision and Graphics, VR/AR Optimization, Multimodal Scene Understanding and Visual Representation Learning.
- Supervising and mentoring M.Sc. and Ph.D. students.

Samsung Research | London, UK 2023 – 2024

- *AI and Graphics Research Intern.*
- Advisor: Dr Mete Ozay.
- Research Area: Improved existing algorithms for efficient personalized object detection and recognition. Developed on-device solutions.
- Publication of 2 papers and 1 patent.

University of Padova | Padova, Italy 2019 – 2024

- *Teaching Assistant (4+ years teaching Unity).*
- Prepared and taught lab lectures in courses such as “3D Vision and eXtended Reality”, “Digital Forensics”, “Digital and Interactive Multimedia”, “Usability and User Experience”.

Uqido S.R.L. | Padova, Italy 2022 – 2022

- *Unity (C#) Developer.*
- Developed a VR application for Quest 2 in collaboration with the Department of Pharmaceutical Sciences.

EDUCATION

University of Padova Padova, Italy

Ph.D. in Information Engineering 2021 – 2024

- Advisor: Prof. Simone Milani
- Thesis: “Robust Visual Representation across Modalities in Semantic Scene Understanding”.
- Published 10 papers in International Journals and Conferences.

University of Padova Padova, Italy

M.Sc. in Internet and Multimedia Engineering 2019 – 2021

- GPA: 30/30 | Grade: 110/110 with Honors.
- Thesis: “Curriculum Learning for LiDAR Semantic Segmentation”.

University of Padova Padova, Italy

B.Sc. in Information Engineering 2016 – 2019

- Thesis: “Mixed Reality Applications in Medical Therapy” - MR application for HoloLens in collaboration with Dreamship Studios s.r.l.

OTHER EDUCATION

BigRock Institute of Magic Technologies Treviso, Italy

Master in Computer Graphics 2024 – 2025

- Professional technical and artistic training in 3D Computer Graphics.
- Certified in Autodesk Maya. Overview of different CG software.

SKILLS

Languages: Italian (C2), English (C1), French (A2).

Programming: Python, C++, MATLAB, C, C#, Bash, TensorFlow, PyTorch, OpenCV.

Software: Autodesk Maya, Blender, Unreal Engine (C++), Unity (C#), Houdini, Adobe Photoshop, Marvelous Designer, Substance Painter, ZBrush, Nuke.

Soft Skills: Public speaking, Mentoring, Teamwork, Project management.

AWARDS

- **Video selected for Computer Animation Festival (CAF) Teaser,**
SIGGRAPH 2025, Vancouver. 2025
- **Best Student Presentation,** APCCAS 2021 conference, Taiwan. 2021
- **Scholarship - Best Student Award,**
Seasonal School AIRONE, Scuola Superiore S.Anna, Pisa, IT. 2021

PUBLICATIONS

International Conferences

- C1. Chiara Schiavo, **Elena Camuffo**, Leonardo Badia, and Simone Milani, “SAGE: Semantic-Driven Adaptive Gaussian Splatting in Extended Reality”, In *European Signal Processing Conference (EUSIPCO)*, 2025.
- C2. Aygun Jabrayilova, **Elena Camuffo**, Laura Crosara, and Leonardo Badia, “Age of Information for Quantum Communication Channels with Monogamy of Entanglement”, In *IEEE International Mediterranean Conference on Communications and Networking (MeditCOM)*, IEEE, 2025.
- C3. **Elena Camuffo**, Umberto Michieli, Simone Milani, Ji Joong Moon, and Mete Ozay. “Enhanced Model Robustness to Input Corruptions by Per-corruption Adaptation of Normalization Statistics”. In *International Conference on Intelligent Robots and Systems (IROS)*. IEEE, 2024.
- C4. Francesco Barbato, **Elena Camuffo**, Simone Milani, and Pietro Zanuttigh. “Continual Road- Scene Semantic Segmentation via Feature-Aligned Symmetric Multi-Modal Network”. In *International Conference on Image Processing (ICIP)*. IEEE, 2024.
- C5. **Elena Camuffo**, Umberto Michieli, Ji Joong Moon, Daehyun Kim, and Mete Ozay. “FFT-based Selection and Optimization of Statistics for Robust Recognition of Severely Corrupted Images”. In *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. IEEE, 2023.
- C6. Devid Campagnolo*, **Elena Camuffo***, Umberto Michieli, Paolo Borin, Simone Milani, and Andrea Giordano. “Fully Automated Scan-to-BIM via Point Cloud Instance Segmentation”. In *International Conference on Image Processing (ICIP)*. IEEE, 2023.
*: denotes equal contribution.
- C7. **Elena Camuffo** and Simone Milani. “Continual Learning for LiDAR Semantic Segmentation: Class-Incremental and Coarse-to-Fine Strategies on Sparse Sata”. In *International Conference of Computer Vision and Pattern Recognition Workshops (CVPRW)*. IEEE, 2023.
- C8. **Elena Camuffo**, Federica Battisti, Francesco Pham, and Simone Milani. “Deep 3D Model Optimization for Immersive and Interactive Applications”. In *European Workshop on Visual Information Processing (EUVIP)*. IEEE, 2022.
- C9. **Elena Camuffo**, Luca Gorghetto, and Leonardo Badia. “Moving Drones for Wireless Coverage in a Three-Dimensional Grid Analyzed via Game Theory.” In *Asia Pacific Conference on Circuit and Systems (APCCAS)*, IEEE, 2021.

- J1. Marco Maida, Alberto Crescini, Marco Perronet, **Elena Camuffo**, “Claycode: Stylabe and Deformable 2D Scannable Codes”, In *Transactions on Graphics (TOG)*, ACM, 2025. [Oral presentation at SIGGRAPH 2025, video selected for CAF Teaser].
- J2. **Elena Camuffo**, Umberto Michieli, and Simone Milani. “Learning from Mistakes: Self-Regularizing Hierarchical Representations in Point Cloud Semantic Segmentation”. *Transactions on Multimedia (TMM)*, IEEE, 2023.
- J3. Daniele Mari, **Elena Camuffo**, and Simone Milani. Cactus: “Content-Aware Compression and Transmission Using Semantics for Automotive LiDAR data”. *Sensors*, 2023.
- J4. **Elena Camuffo**, Daniele Mari, and Simone Milani. “Recent Advancements in Learning Algorithms for Point Clouds: An Updated Overview”. *Sensors*, 2022.

Patents

- P1. Umberto Michieli, Mete Ozay, Ji Joon Moon, Daehyun Kim, Elena Camuffo, “Performing a computer vision task”, US Patent App. 18/933,406.