

ELENA CAMUFFO

Vision/AI Engineer | Ph.D. Candidate

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WORK EXPERIENCE

University of Padova | Padova, Italy 2024 – Present

- *Postdoctoral Research Scientist.*
- Conducted research in 3D Computer Vision, VR/AR Optimization, Multimodal Scene Understanding and Visual Representation Learning.
- Supervised and mentored 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 filing of 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

- *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
- Research area: Multimodal Scene Understanding and Representation Learning.
- 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 training in technical and artistic skills for 3D Computer Graphics.
- Certified in Autodesk Maya.

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.

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

AWARDS

- **Best Student Presentation**, APCCAS conference, Taiwan. 2021
- **Scholarship - Best Student Award**,
Seasonal School AIRONE, Scuola Superiore S.Anna, Pisa, IT. 2021

PUBLICATIONS

International Conferences

- C1. 1 paper accepted as a journal paper at SIGGRAPH 2025.
- C2. **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.
- C3. 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.
- C4. **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.
- C5. 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.
- C6. **Elena Camuffo** and Simone Milani. “Continual learning for LiDAR semantic segmentation: Class-incremental and coarse-to-fine strategies on sparse data”. In *International Conference of Computer Vision and Pattern Recognition Workshops (CVPRW)*. IEEE, 2023.
- C7. **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.
- C8. **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.

International Journals

- J1. **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.
- J2. Daniele Mari, **Elena Camuffo**, and Simone Milani. Cactus: “Content-aware compression and transmission using semantics for automotive LiDAR data”. *Sensors*, 2023.
- J3. **Elena Camuffo**, Daniele Mari, and Simone Milani. “Recent advancements in learning algorithms for point clouds: An updated overview”. *Sensors*, 2022.