

Giulia Rizzoli

Ph.D Student

Date of birth: 1996-04-25

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in [rizzoli-giulia](#)

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Research Interests

Computer Vision, Deep Learning, Continual Learning, Multi-modal, Domain Adaptation, Semantic Segmentation

Work Experience

- Oct. 2021 - **Teaching Assistant**, University of Padova.
present Tutorship and teaching assistant for machine learning (21/22, 23/24) and computer vision (22/23, 23/24) for Physics of Data and ICT for Internet and Multimedia Master Degrees. The activity includes preparing the content for laboratories, delivering them to the class, and grading the students' course homework.
- Apr. 2021 - **Research Intern**, Sony B.V. Europe, Stuttgart, Germany.
- Aug. 2021 Computer vision-related research on the estimation of reflectance given the pointcloud and IR intensities from Time-of-flight cameras. It included the acquisition of 3D data in a controlled lab environment and the measurement of optical properties of materials, followed by the evaluation of the methods on the captured image data.

Education

- Oct. 2021 - **Ph.D. in Information Engineering**, University of Padova, Department of
Present Information Engineering, LTTM research group.
Supervisor: Pietro Zanuttigh.
Research topic: Multi-modal Scene Understanding.
- Oct. 2019 - **M.Sc. in ICT for Internet and Multimedia**, University of Padova.
Sept. 2021 Grade: 110/110 with honors.
Thesis: Reflectance Estimation using Time-of-Flight cameras.
Supervisor: Pietro Zanuttigh.
Co-Supervisor: Henrik Schäffer.
- Oct. 2020 - **Erasmus+ in Electrical and Communication Engineering**, RWTH
Mar. 2021 Aachen.
- Sep. 2015 - **B.Sc. in Information Engineering**, University of Padova.
Oct. 2019 Thesis: Methods for the analysis of heterogeneous biological signals.
Supervisor: Giulia Cisotto.

Jan. 2014 - **College Exchange**, Kings College, Bournemouth.

Mar. 2014 A-level classes in Maths, Physics, Biology, Chemistry, and Academic English.

Computer Skills

- Programming and scripting: Python, C, C++, Matlab, R, Java
- Scientific Computing: Numpy, SciPy, Pandas, Matplotlib, Scikit-learn
- Deep Learning: PyTorch, TensorFlow, Keras, OpenCV
- System: Git, HPC, Singularity, Slurm

Languages

Italian Native proficiency
English Full professional proficiency
German Elementary proficiency

Grants

- 2022 **Research Scholarship**, Department of Information Engineering, University of Padova.
Research Title: “Multi-modal Semantic Segmentation”.
Project: Enhanced Photography with Deep Learning.
- 2021 **Research Scholarship**, Department of Information Engineering, University of Padova.
Research Title: “Incremental Learning Techniques for Semantic Segmentation”.
Project: Semantic Segmentation in the Wild.
- 2021 **Erasmus+ for Traineeships**
- 2020 **Erasmus+ for Studies**

Other

IEEE Student Member

Participation in the Summer School of Enabling Technologies for Industrial Internet of Things 2020, University of Pisa

Participation in the International Computer Vision Summer School (ICVSS) 2022, *acceptance rate* $\sim 24\%$

Publications

Journals

- [J1] G. Rizzoli, F. Barbato, P. Zanuttigh, “Multimodal Semantic Segmentation in Autonomous Driving: A Review of Current Approaches and Future Perspectives”, Technologies, 2022.
- [J2] D. Shenaj*, G. Rizzoli*, P. Zanuttigh, “Federated Learning in Computer Vision”, IEEE Access, 2023.
- [J3] L. Chang, G. Rizzoli, F. Barbato, P. Zanuttigh, “RECALL+: Adversarial Web-based Replay for Continual Learning in Semantic Segmentation”, Under Review.

Conferences

- [C1] F. Barbato, G. Rizzoli, P. Zanuttigh, “Depthformer: Multimodal positional encodings and cross-input attention for transformer-based segmentation networks”, in: ICASSP 2023-2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), IEEE, 2023.
- [C2] G. Rizzoli*, F. Barbato*, M. Caligiuri*, P. Zanuttigh, “SynDrone - Multi-modal UAV Dataset for Urban Scenarios”, in: Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops, 2023.
- [C3] H. Jung, S.-C. Wu, P. Ruhkamp, H. Schieber, P. Wang, G. Rizzoli, H. Zhao, S. D. Meier, D. Roth, N. Navab, B. Busam, “HouseCat6D - A Large-Scale Multi-Modal Category Level 6D Object Pose Dataset with Household Objects in Realistic Scenarios”, Under review.
- [C4] G. Rizzoli, D. Shenaj, P. Zanuttigh, “Source-Free Domain Adaptation for RGB-D Semantic Segmentation with Vision Transformers”, Under review.

* indicates equal contribution

Projects

- Nov. 2019 - **Polarization in Pro-Life and Pro-Choice Network on Twitter**, Information Engineering Department (DEI) of Padova in collaboration with Linguistic and Literary Studies Department (DISLL)
Jan. 2020 Network analysis on the topic of abortion based on the use of different hashtags and words to reinforce opinion. The different connections between the tweets, their text and their hashtags underlined political and ideological orientations.
- Apr. – Jun. **SARS-CoV-2 gene analysis**, Information Engineering Department (DEI) of Padova
2020 Project following the COVID-19 outbreak: exploitation of genomics computational techniques to underline differential gene expression, ontology and discovering clusters.

Interests

Travelling, Hikings, Volleyball and Cats.