

# Umberto Michieli

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📅 Date of birth: 28/11/1994



I am a Computer Vision and Deep Learning research scientist. My goal is to contribute to the continual adaptation of AI to human needs and its adoption into everyday life.

*Last Update: September 25, 2021.*

## Education

- 2021–  
present **Postdoctoral Researcher**, *University of Padua*.  
Research topic: "Semantic Scene Understanding in the Wild".
- 2018–2021 **Ph.D. in Information Engineering**, *University of Padua*.  
Research topic: "Visual Understanding across Semantic Groups, Domains and Devices".  
Supervisor: prof. Pietro Zanuttigh.  
Fellowship: University scholarship on free subject.  
**Seasonal Schools**, DeepLearn2021, M2L2020, AI-DLDA2020, REGML2020, GTTI2020, ICVSS2019, GTTI2019, CMMRS2018.
- 2016–2018 **M.Sc. in Telecommunication Engineering**, *University of Padua*.  
Grade: 110/110 Summa cum Laude.  
Thesis: "Link Prediction on Real and Synthetic Complex Networks".  
Fellowship: Scholarship grant "Mille e una lode" for merit by University of Padua (2018)
- 2013–2016 **B.Sc. in Information Engineering**, *University of Padua*.  
Grade: 110/110 Summa cum Laude  
Thesis: "Correlation and Coherence Analysis between EEG and EMG Signals".
- 2008–2013 **High School Diploma**, *Liceo Scientifico Giorgione, Castelfranco Veneto*.

## Work Experience

- Sep. 2021 – **Adjunct Professor**, *University of Padova*.  
Jan 2022 *Neural Networks and Deep Learning*, M.Sc. course
- Sep. 2020 – **Internship as AI Research Engineer**, *Samsung Research UK*.  
May 2021 Topic: Federated Learning of Computer Vision Models  
Supervisor: dr. Mete Ozay
- Feb. – Jul. **Visiting Researcher**, *Technische Universität Dresden (TUD)*.  
2018 Experimental research on link prediction on real and synthetic complex networks.  
Supervisor: prof. Carlo Vittorio Cannistraci.  
Fellowship: Erasmus fellowship & TUD grant to attend NetSci 2018
- 2018-22 **Teaching Assistant**, *University of Padova*.  
Machine Learning (18/19, 19/20 and 21/22), M.Sc. course  
Computer Vision (18/19), M.Sc. course

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## Academic Experience

### Program Chair and Reviewer Activity.

- *Journals*: **IEEE** TIP, TMM, TNNLS, TETC, TIV; **Elsevier** INFFUS, PR; **ACM** TOMM; **MDPI** Remote Sensing, Applied Sciences; **ISPRS** Journal of Photogrammetry and Remote Sensing
- *Main conferences*: ICPR, ICASSP, CPHS, BGM
- *Workshops*: CVPRW on Continual Learning, ECCVW on Transferring and Adapting Source Knowledge, ICMLW on Continual Learning, IJCAIW on Continual Semi-Supervised Learning

### General Chair Activity.

- 2021 GTTI workshop – Deep signal processing for a safer world

### Invited Talks.

- 09/2021 *Visual Understanding across Semantic Groups, Domains and Devices* - Politecnico University of Turin
- 07/2021 *Federated Learning in Computer Vision* - Computer Vision Talks Series
- 06/2021 *Internal Feature Representations in Federated Learning* - University of Padova

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## Fellowships and Awards

- 2021 Winner of IEEE Young Professional pitch contest *My Research in 5 Minutes*.
- 2021 Travel Award from MDPI Computers.
- 2021 Bronze Prize at Samsung Research UK Innovation Challenge.
- 2021 Winner of Photo Competition at Samsung Research UK (available at [my website](#)).
- 2020 ICPR2020 Free Attendance Pass from the General Chairs.
- 2020 Collaborator of SEED project "Semantic Segmentation in the Wild" (EUR 33K).
- 2018 Selected and awarded a fellowship from the organizers of "*The Cornell, Maryland, Max Planck Pre-doctoral Research School*" (CMMRS).
- 2018 Fellowship by Technische Universität Dresden to attend NetSci 2018.
- 2018 Erasmus fellowship at Technische Universität Dresden.
- 2018 Scholarship grant "Mille e una lode" for merit by University of Padova.

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## Personal Skills

### Languages

- Italian **Mother Tongue**
- English **C1 level (Advanced user)**
- Spanish **A2 level (Basic user)**

### Computer skills

- Programming and scripting with different languages: python, MATLAB, java, javascript, C++, bash, batch, git
- Deep learning frameworks: Tensorflow, Pytorch, Keras
- Data science toolkits: Scikit-learn, Jupyter Notebooks, Pandas
- Discrete event network simulator ns-3
- Typesetting:  $\text{\LaTeX}$

### Communication and Managerial Skills

**Supervision**, I have co-supervised more than 20 M.Sc. and B.Sc. dissertations. Many works were published in international peer-reviewed conferences and journals.

**Team Work**, I worked in teams with people from different cultural backgrounds, both on site and remotely.

**Project Management**, I am pre-enrolled at AICQ SICEV "Associated Project Manager" Register. I was finalist of *Accenture Innovation Business Game 2017*.

## Publications

### Journals

- [1] U. Michieli and P. Zanuttigh, "Knowledge Distillation for Incremental Learning in Semantic Segmentation," *Elsevier Journal on Computer Vision and Image Understanding (CVIU)*, 2021.
- [2] M. Toldo, U. Michieli, G. Agresti, and P. Zanuttigh, "Unsupervised Domain Adaptation for Mobile Semantic Segmentation based on Cycle Consistency and Feature Alignment," *Image and Vision Computing (IMAVIS)*, 2020.
- [3] M. Toldo, A. Maracani, U. Michieli, and P. Zanuttigh, "Unsupervised Domain Adaptation in Semantic Segmentation: a Review," *Technologies*, vol. 8, no. 35, 2020.
- [4] M. Mel, U. Michieli, and P. Zanuttigh, "Incremental and Multi-Task Learning Strategies for Coarse-to-Fine Semantic Segmentation," *Technologies, special issue on Computer Vision and Image Processing Technologies*, vol. 8, no. 1, 2020.
- [5] U. Michieli, M. Basetton, G. Agresti, and P. Zanuttigh, "Adversarial Learning and Self-Teaching Techniques for Domain Adaptation in Semantic Segmentation," *IEEE Transactions on Intelligent Vehicles (T-IV)*, vol. 5, no. 3, pp. 508–518, 2020.

### Conferences

- [6] A. Maracani\*, U. Michieli\*, M. Toldo\*, and P. Zanuttigh, "RECALL: Replay-based Continual Learning in Semantic Segmentation," *International Conference on Computer Vision (ICCV)* [acceptance rate=25.9%], 2021.
- [7] U. Michieli and M. Ozay, "Are All Users Treated Fairly in Federated Learning Systems?," *Conference on Computer Vision and Pattern Recognition (CVPR), Workshop on Responsible Computer Vision (RCV)*, 2021.
- [8] F. Barbato, M. Toldo, U. Michieli, and P. Zanuttigh, "Latent Space Regularization for Unsupervised Domain Adaptation in Semantic Segmentation," *Conference on Computer Vision and Pattern Recognition (CVPR), Workshop on Autonomous Driving (WAD)*, 2021.
- [9] U. Michieli and P. Zanuttigh, "Continual Semantic Segmentation via Repulsion-Attraction of Sparse and Disentangled Latent Representations," *Computer Vision and Pattern Recognition (CVPR)* [acceptance rate=23.6%], 2021.
- [10] M. Toldo, U. Michieli, and P. Zanuttigh, "Unsupervised Domain Adaptation in Semantic Segmentation via Orthogonal and Clustered Embeddings," *Winter Conference on Applications of Computer Vision (WACV)* [acceptance rate=28%], 2021.
- [11] U. Michieli, E. Borsato, L. Rossi, and P. Zanuttigh, "GMNet: Graph Matching Network for Large Scale Part Semantic Segmentation in the Wild," *European Conference on Computer Vision (ECCV), Glasgow (UK)* [acceptance rate=26%], 2020.
- [12] T. Spadotto, M. Toldo, U. Michieli, and P. Zanuttigh, "Unsupervised Domain Adaptation with Multiple Domain Discriminators and Adaptive Self-Training," *International Conference on Pattern Recognition (ICPR), Milan (Italy)* [first round acceptance rate=35.6%], 2020.
- [13] U. Michieli and P. Zanuttigh, "Incremental Learning Techniques for Semantic Segmentation," *International Conference on Computer Vision (ICCV), Workshop on*

*Transferring and Adapting Source Knowledge in Computer Vision (TASK-CV), Seoul (South Korea), 2019.*

- [14] U. Michieli, M. Camporese, A. Agiollo, G. Pagnutti, and P. Zanuttigh, "Region Merging Driven by Deep Learning for RGB-D Segmentation and Labeling," *International Conference on Distributed Smart Cameras (ICDSC), Trento (Italy), 2019.*
- [15] M. Biassetton, U. Michieli, G. Agresti, and P. Zanuttigh, "Unsupervised Domain Adaptation for Semantic Segmentation of Urban Scenes," *Conference on Computer Vision and Pattern Recognition (CVPR), Workshop on Autonomous Driving (WAD), Long Beach (US), 2019.*
- [16] U. Michieli and L. Badia, "Game Theoretic Analysis of Road User Safety Scenarios Involving Autonomous Vehicles," *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Bologna (Italy), pp. 1377–1381, 2018.*
- [17] G. Cisotto, U. Michieli, and L. Badia, "A coherence study on EEG and EMG signals," *IEEE Global Wireless Summit (GWS), Aarhus (Denmark), pp. 372–376, 2016.*

#### [Book Chapters](#)

- [18] U. Michieli, M. Toldo, and P. Zanuttigh, "Unsupervised Domain Adaptation and Continual Learning in Semantic Segmentation," *Advanced Methods and Deep Learning in Computer Vision, Elsevier, 2021 (scheduled).*

\* indicates equal contribution.

*I hereby authorize the processing of the personal data contained in this CV in compliance with the Italian Personal Data Protection Code (Legislative Decree no. 196 of 30 June 2003).*