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: June 28, 2021.

Education

2018–2021 (expected)	**Ph.D. in Information Engineering**, *University of Padua*. Research topic: "Knowledge Transfer Techniques for Semantic Segmentation". Supervisor: prof. Pietro Zanuttigh. Fellowship: University scholarship on free subject.
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 Padova (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. 2020 – May 2021	**Internship at Samsung Research UK, AI Research Engineer**. Topic: Federated Learning of Computer Vision Models Supervisor: dr. Mete Ozay
Feb. – Jul. 2018	**Visiting Researcher at Technische Universität Dresden (TUD)**. 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
2018-20	**Teaching Assistant**. Machine Learning (18/19 and 19/20), M.Sc. course Computer Vision (18/19), M.Sc. course

Reviewer.

- *Journals*: **IEEE** T-MM, T-NNLS, T-ETC, T-IV; **Elsevier** Information Fusion (INFFUS); **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

Chair Activity.

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

Seasonal Schools, M2L2020, AI-DLDA2020, REGML2020, GTTI2020, ICVSS2019, GTTI2019, CMMRS2018, DeepLearn2021.

Fellowships and Awards

2021   Travel Award from MDPI Computers (800 CHF).

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.

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: 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. Biasetton, 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] 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.

[7] 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.

[8] U. Michieli and P. Zanuttigh, "Continual Semantic Segmentation via Repulsion-Attraction of Sparse and Disentangled Latent Representations," *Computer Vision and Pattern Recognition (CVPR) 2021 [acceptance rate approx. 23.6%]*, 2021.

[9] 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 approx. 28%]*, 2021.

[10] 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.

[11] 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.

[12] 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.

[13] 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.

[14] M. Biasetton, 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.

[15] 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.

[16] 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

[17] 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).