



Fabio Cermelli

Ph.D. Student

Birth date and place: December 3rd, 1994, Alessandria, Italy

Citizenship: Italian

+39 338 8974081 — fabio.cermelli@polito.it — linkedin.com/in/fabiocermelli/

Education

Doctor of Philosophy Computer and Control Engineering Politecnico di Torino The Ph.D. focus on reducing the cost of training semantic segmentation models. I am working under the supervision of prof. B. Caputo and supported by the Italian Institute of Technology.	11/2019 - present Turin, Italy
Master of Science Software Engineering - cum laude Politecnico di Torino	10/2016 - 11/2018 Turin, Italy
Bachelor of Arts Computer Engineering - cum laude Politecnico di Torino	10/2013 - 7/2016 Turin, Italy

Experience

Member of IEEE-HKN MuNu Chapter Politecnico di Torino HKN is an honor society of IEEE which promote and recognize excellence in the electronic and computer engineering fields. I was president of the chapter between 10/2017 - 9/2018.	10/2016 – present Turin, Italy
Visiting Researcher Fondazione Bruno Kessler During this period I started the collaboration with Massimiliano Mancini, Elisa Ricci, Samuel Rota Bulò.	04/2019 – 06/2019 Trento, Italy
Research Fellow Italian Institute of Technology	02/2019 – 06/2019 Turin, Italy
Smart Spaces Application Developer TIM (Telecom Italia)	3/2016 – 7/2016 Turin, Italy

Teaching Experience

Teaching Assistant Politecnico di Torino Computer Science, held by prof. A. Bottino and V. Gatteschi Algorithms and Advanced Programming, held by prof. P. Camurati and G. Cabodi Machine Learning and Deep Learning, held by prof. B. Caputo and T. Tommasi	 Turin, Italy 10/2019 — present 10/2020 — 2/2021 3/2020 — present
Master Thesis Co-Supervisor Politecnico di Torino On the Importance of Pseudo-Labeling for Generalized Zero-Shot Semantic Segmentation That led to the publication of "A Closer Look at Self-training for Zero-Label Semantic Segmentation" on the Challenges of Class Imbalance in Federated Learning for Semantic Segmentation on the Challenges of Federated Learning in Semantic Segmentation Across Domains Modeling the Background for Incremental Learning in Object Detection Semantic Segmentation in the Open World Towards Open World in Object Detection	 Turin, Italy G. Pastore E. Fani L. Fantauzzo A. Geraci M. Musarra M. Tarantino

Publications and *Submissions



- * **Modeling the Background for Incremental and Weakly-Supervised Semantic Segmentation**
F. Cermelli, M. Mancini, S. Rota Bulò, E. Ricci and B. Caputo, 2021, under submission at IEEE Transactions on Pattern Analysis and Machine Intelligence
- * **A Contrastive Distillation Approach for Incremental Semantic Segmentation in Aerial Images**
E. Arnaudo, F. Cermelli, A. Tavera, C. Rossi, B. Caputo, 2021, under submission at the 21th International Conference on Image Analysis and Processing
- Pixel-by-Pixel Cross-Domain Alignment for Few-Shot Semantic Segmentation**
A.Tavera, F. Cermelli, C. Masone, B. Caputo, 2022, In Proceedings of the Winter Conference on Applications of Computer Vision 2022

Prototype-based Incremental Few-Shot Segmentation

F. **Cermelli**, M. Mancini, Y. Xian, Z. Akata, B. Caputo, 2021, In Proceedings of the British Machine Vision Conference 2021

Detecting Anomalies in Semantic Segmentation with Prototypes

D. Fontanel, F. **Cermelli**, M. Mancini, B. Caputo, 2021, In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (SAIAD Workshop)

A Closer Look at Self-training for Zero-Label Semantic Segmentation

G. Pastore, F. **Cermelli**, Y. Xian, M. Mancini, Z. Akata, B. Caputo, 2021, In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (L2ID Workshop)

On the Challenges of Open World Recognition under Shifting Visual Domains

D. Fontanel, F. **Cermelli**, M. Mancini, B. Caputo, 2020, In IEEE Robotics and Automations Letters

Boosting Deep Open World Recognition by Clustering

D. Fontanel, F. **Cermelli**, M. Mancini, S. Rota Bulò, E. Ricci, B. Caputo, 2020, In IEEE Robotics and Automations Letters

Modeling the Background for Incremental Learning in Semantic Segmentation

F. **Cermelli**, M. Mancini, S. Rota Bulò, E. Ricci, B. Caputo, 2020, In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition

The RGB-D Triathlon: Towards Agile Visual Toolboxes for Robots

F. **Cermelli**, M. Mancini, E. Ricci, B. Caputo, 2019, In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Discovering Latent Domains for Unsupervised Domain Adaptation Through Consistency

M. Mancini, L. Porzi, F. **Cermelli**, B. Caputo, 2019, In Proceedings of the International Conference on Image Analysis and Processing

T4T: Tangible interface for tuning 3D object manipulation tools

Cannavo, F. **Cermelli**, V. Chiaramida, G. Ciccone, F. Lamberti, P. Montuschi, G. Paravati, 2017, In IEEE Symposium on 3D User Interfaces (3DUI) 2017

Awards

Outstanding Reviewer in the IEEE/CVF International Conference on Computer Vision (ICCV) 2021.

Involvement in the International Research Community

I attended the following conferences as a **presenter**:

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2020
- ELLIS Interactive Learning and Interventional Representations (ILIR) Workshop
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2020

I acted as **reviewer** for the following **conferences**:

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2021 and 2020
- IEEE/CVF International Conference on Computer Vision (ICCV) 2021
- European Conference on Computer Vision (ECCV) 2020
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2021 and 2020
- IEEE International Conference on Robotics and Automation (ICRA) 2021 and 2020
- International Conference on Machine Learning (ICML) 2021

I acted as a **reviewer** for the following **journals**:

- IEEE Robotics and Automation Letters (RA-L)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
- Springer International Journal of Computer Vision (IJCV)
- IEEE Transactions on Emerging Topics in Computing

Languages

Italian (Native)
English (B2)

Outside the Workplace

I love to hangout with friends and play sports (soccer, padel, boxe, ski). I love traveling, reading non-fiction books, and cooking (especially pizza).