

Riccardo Volpi, Ph.D.

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WORK EXPERIENCE

- **Naver Labs Europe** Grenoble, FR
Research Scientist *Feb 2020 – present*
 - **Summary:** Leading a project about continual learning and domain adaptation for computer vision models.
- **Istituto Italiano di Tecnologia** Genova, IT
Ph.D. Student 2015 – 2018, Postdoc 2019 *Nov 2015 – Dec 2019*
 - **Summary:** Developed novel methods to improve robustness, adaptation and generalization properties of machine learning systems. Worked on model of retinal ganglion cell population activity for Renvision FET project.
- **Stanford University** Stanford, CA
Visiting Student Researcher at Stanford Vision and Learning Lab *Fall 2017 – Winter 2018*
 - **Summary:** Designed novel methods to use deep learning models on different domains, for both classification and semantic segmentation, advised by Prof. Silvio Savarese.
- **University College Cork** Cork City, IE
Visiting Student at Biomedical Design Research Group *Spring 2015 – Summer 2015*
 - **Summary:** Devised different algorithms for 3D-3D registration in Electromagnetic Navigation Bronchoscopy.

EDUCATION

- **Istituto Italiano di Tecnologia** Genova, IT
Ph.D. – Pattern Analysis and Computer Vision (highest grades) *Nov. 2015 – Oct. 2018*
 - **Thesis:** Regularization, Adaptation and Generalization of Neural Networks
 - **Advisor:** Prof. Vittorio Murino
- **Università degli Studi di Genova** Genova, IT
Master of Science in Bioengineering (110/110 cum laude) *Sep. 2013 – Oct. 2015*
 - **Thesis:** Registration Approaches for Open-Source Electromagnetic Navigation Bronchoscopy
Bachelor of Science in Biomedical Engineering (106/110) *Sep. 2010 – Oct. 2013*
 - **Thesis:** Bistability in Integrate-and-Fire Neuronal Networks

SKILLS

- **Programming:** Python | **Frameworks:** PyTorch, TensorFlow | **Tools:** Vim, Git, Tmux | **Data viz:** Streamlit
- **Languages:** Italian (*mother tongue*), English (*fluent*), French (*basic*)

RESEARCH SUMMARY (GOOGLE SCHOLAR)

Published at CVPR, NeurIPS, ICCV. Co-author of one book. Co-inventor of five patent filings. Reviewer in all major machine learning and computer vision venues (NeurIPS, CVPR, ICCV, ICLR, etc.).

Publications

CONFERENCE PAPERS

- **CVPR 2023:** De Jorge P., Volpi R., Torr, P.H.S., Rogez G., *Reliability in Semantic Segmentation: Are We on the Right Track?* To appear.
- **CVPR 2022:** Volpi R., De Jorge P., Larlus D., Csurka G. *On the Road to Online Adaptation of Semantic Image Segmentation.* June 19–24, 2022, New Orleans, Louisiana.
- **CVPR 2021:** Volpi R., Larlus D., Rogez G., *Continual Adaptation of Visual Representations via Domain Randomization and Meta-Learning.* June 19–25, 2021, Virtual (**Oral**).
- **CVPR 2018:** Volpi R., Morerio P., Savarese S., Murino V., *Adversarial Feature Augmentation for Unsupervised Domain Adaptation,* June 18–22, 2018, Salt Lake City, Utah.
- **NeurIPS 2022:** De Jorge P., Bibi A., Volpi R., Sanyal A., Torr, P.H.S., Rogez G., Dokania P.K., *Make Some Noise: Reliable and Efficient Single-Step Adversarial Training.* Nov 28–Dec 9, 2022, New Orleans, Louisiana.
- **NeurIPS 2018:** Volpi R.*, Namkoong H.*, Sener O., Duchi J., Murino V., Savarese S., *Generalizing to Unseen Domains via Adversarial Data Augmentation,* December 03–08, 2018, Montreal, Canada.
- **ICCV 2019:** Volpi R. and Murino V. *Addressing Model Vulnerability to Distributional Shifts over Image Transformation Sets,* October 27–November 02, 2019, Seoul, Korea.
- **ICCV 2017:** Morerio P., Cavazza J., Volpi R., Vidal R., Murino V., *Curriculum Dropout,* October 22–29, 2017, Venice, Italy.
- **WACV 2020:** Morerio P., Volpi R., Ragonesi R. and Murino V. *Generative Pseudo-label Refinement for Unsupervised Domain Adaptation,* March 02–05, 2020, Snowmass Village, Colorado.

BOOKS

- **2021:** Csurka G., Volpi R., Chidlovskii B., *Semantic Image Segmentation: Two Decades of Research.* Foundations and Trends in Computer Graphics and Vision.

JOURNALS

- **2022:** Cavazza J., Ahmed W., Volpi R., Morerio P., Bossi F., Willemse C., Wykowska A., Murino V., *Understanding Action Concepts from Videos and Brain Activity.* Scientific Reports.
- **2020:** Volpi R.*, Zanotto M.*, Maccione A., Di Marco S., Berdondini L., Sona D., Murino V., *Modeling a Population of Retinal Ganglion Cells with Restricted Boltzmann Machines.* Scientific Reports.
- **2019:** Zunino A.*, Cavazza J.*, Volpi R., Morerio P., Cavallo A., Becchio C., Murino V., *Predicting Intentions from Motion: the Subject-Adversarial Adaptation Approach.* International Journal of Computer Vision (IJCV).

PRE-PRINTS

- **2020:** Sinha A.*, Namkoong H.*, Volpi R., Duchi J., *Certifying Some Distributional Robustness with Principled Adversarial Training.* arXiv:1710.10571v5 [stat.ML].

BLOG POSTS

- **2021:** Volpi R., Larlus D., Rogez G., *Continual learning of visual representations without catastrophic forgetting.* Naver Labs Europe's Blog.
- **2020:** Volpi R., Larlus D., Rogez G., *The short memory of artificial neural networks.* Naver Labs Europe's Blog.

PATENTS

- **2020–2023:** Five patent filings.