Riccardo Volpi, Ph.D.

- *Homepage:* ricvolpi.github.io • *Email:* rvolpi@hey.com • *Phone:* +39 340 265 8148
- *Address:* 5 Rue Jean-Baptiste Pradel, Grenoble, 38000, France

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 for computer vision tasks.

- **Stanford University** — Stanford, CA
  Visiting Student Researcher at Stanford AI 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 (*very basic*)

Community

- **Reviewer activity**: CVPR (2019–2021), ICCV (2019), NeurIPS (2019–2022), ICML (2020), ECCV (2020), ICLR (2020–2021), WACV (2021), Pattern Recognition, TPAMI, IJCV.
- **Open-source activity**: github.com/ricvolpi

Publications

Conference Papers

- **CVPR 2022**: Volpi R., De Jorge P., Larlus D., Csurka G. *Continual On the Road to Online Adaptation of Semantic Image Segmentation.* To appear.
- **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)**.
- **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.
- **ICCV 2019**: Volpi R. and Murino V. *Addressing Model Vulnerability to Distributional Shifts over Image Transformation Sets*, October 27–November 02, 2019, Seoul, Korea.
- **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.
- **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.
- **ICCV 2017**: Morerio P., Cavazza J., Volpi R., Vidal R., Murino V., *Curriculum Dropout*, October 22–29, 2017, Venice, Italy.

Journals

- **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).

Workshops

- **2021**: Ragonesi R., Volpi R., Cavazza J., Murino V., *Learning Unbiased Models via Mutual Information Backpropagation.* Learning from Limited and Imperfect Data (L2ID) Workshop at CVPR **(Oral)**.
- **2021**: Zunino A., Bargal S. A., Volpi R., Sameki M., Zhang J., Sclaroff S., Murino V., Saenko K. *Explainable Deep Classification Models for Domain Generalization.* IEEE CVPR Workshop on Fair, Data Efficient and Trusted Computer Vision.
- **2019**: Volpi R. and Murino V. *Model Vulnerability to Distributional Shifts over Image Transformation Sets.*, Vision for All Seasons: Bad Weather and Nighttime Workshop at CVPR 2019, June 16, 2019, Long Beach, California.
- **2016**: Volpi R., Zanotto M., Sona D., Murino V. *Unsupervised Learning of Spatio-Temporal Features from Retinal Neuronal Signals.*, Brains and Bits: Neuroscience Meets Machine Learning Workshop at NIPS 2016, December 9-10, 2016, Barcelona, Spain.

Pre-Prints

- **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.* arXiv:2202.01181 [cs.LG].
- **2021**: Csurka G., Volpi R., Chidlovskii B., *Unsupervised Domain Adaptation for Semantic Image Segmentation: a Comprehensive Survey.* arXiv:2112.03241 [cs.CV].
- **2020**: Cavazza J., Volpi R., Morerio P., Ahmed W., Bossi F., Willemse C., Wykowska A., Murino V., *Understanding Action Concepts from Videos and Brain Activity.* Under review at Scientific Reports.
- **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

- **2020–2022**: Three filings.

Selected talks

- **2022**: *Continual learning: the state of the art*, Università degli studi di Trento, May 3, 2022.
- **2021**: *How to improve out-of-domain robustness in computer vision?*, Università degli studi di Verona, April 27, 2021.
- **2020**: *Meta-learning: fundamentals and applications*, Naver Labs Europe, December 17, 2020.
- **2020**: *How to cope with the dataset bias in computer vision?*, Politecnico di Torino, July 8, 2020 (virtual).
- **2019**: *Facing model vulnerability against distributional shifts*, several appointments.
- **2019**: *Regularization, Adaptation and Generalization of Neural Networks.*, Università degli Studi di Genova, February 25, 2019, Genova, Italy. Ph.D. thesis defense.
- **2018**: *Different approaches to face the dataset bias.*, Istituto Italiano di Tecnologia, July 18, 2018, Genova, Italy.
- **2018**: *Different approaches to face the dataset bias.*, Berkeley University, March 28, 2018, Berkeley, California.
- **2016**: *Human intention prediction with unsupervised feature learning.*, Università degli Studi di Genova, November 28, 2016, Genova, Italy.
- **2016**: *Unsupervised Learning of spatio-temporal features from retina neuronal signals.*, Inria, May 12, 2016, Sophia Antipolis, France.