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. 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.
- **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.
- **CVPR 2022**: Volpi R., De Jorge P., Larlus D., Csurka G. *Continual 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)**.
- **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.

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.