

Riccardo Volpi, Ph.D.

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SUMMARY

Research scientist with academic and industry experience (4+4 years). Published 10+ papers in major computer vision and machine learning venues (NeurIPS, CVPR, etc.). Co-author of one book. Co-inventor of seven patents.

WORK EXPERIENCE

- **Arsenale BioYards** Remote, IT
Lead AI Scientist *Sep 2024 – Now*
 - **Summary:** Machine learning and computer vision for precision fermentation.
- **Naver Labs Europe** Grenoble, FR
Research Scientist *Feb 2020 – Sep 2024*
 - **Summary:** Led projects focused on perception systems for robotics applications (AD and indoor robots).
- **Istituto Italiano di Tecnologia** Genova, IT
Ph.D. Student 2015 – 2018, Postdoc 2019 *Nov 2015 – Dec 2019*
 - **Summary:** Designed novel methods to improve robustness, adaptation and generalization properties of machine learning systems. Developed models for 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*)

Publications

CONFERENCE PAPERS

- **CVPR 2024:** Liu M., Hayes T., Ricci E., Csurka G., Volpi R., *SHiNe: Semantic Hierarchy Nexus for Open-vocabulary Object Detection*. Jun. 17–21, 2024. Seattle, Washington (**Highlight**).
- **CVPR 2023:** De Jorge P., Volpi R., Torr, P.H.S., Rogez G., *Reliability in Semantic Segmentation: Are We on the Right Track?* Jun. 18–22, 2023. Vancouver, Canada.
- **CVPR 2022:** Volpi R., De Jorge P., Larlus D., Csurka G. *On the Road to Online Adaptation of Semantic Image Segmentation*. Jun. 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*. Jun. 19–25, 2021. Virtual (**Oral**).
- **CVPR 2018:** Volpi R., Morerio P., Savarese S., Murino V., *Adversarial Feature Augmentation for Unsupervised Domain Adaptation*, Jun. 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*, Dec. 03–08, 2018. Montreal, Canada.
- **ECCV 2024:** de Jorge P., Volpi R., Dokania P.K., Torr P.H.S., Rogez G., *Placing Objects in Context via Inpainting for Out-of-distribution Segmentation*, Sep 29–Oct 04, 2024. Milan, Italy.
- **ICCV 2019:** Volpi R. and Murino V. *Addressing Model Vulnerability to Distributional Shifts over Image Transformation Sets*, Oct. 27–Nov. 02, 2019. Seoul, Korea.
- **ICCV 2017:** Morerio P., Cavazza J., Volpi R., Vidal R., Murino V., *Curriculum Dropout*, Oct. 22–29, 2017. Venice, Italy.
- **CoLLAs 2024:** Hayes T., De Souza C., Kim N., Kim J., Volpi R., Larlus D., *PANDAS: Prototype-based Novel Class Discovery and Detection*, Jul. 29–Aug. 01, 2024. Pisa, Italy.
- **CoLLAs 2023:** Roy S., Volpi R., Csurka G., Larlus D., *RaSP: Relation-aware Semantic Prior for Weakly Supervised Incremental Segmentation*, Aug. 22–25, 2023. Montreal, Canada.
- **WACV 2020:** Morerio P., Volpi R., Ragonesi R. and Murino V. *Generative Pseudo-label Refinement for Unsupervised Domain Adaptation*, Mar. 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).

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- **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.