# Riccardo Volpi, Ph.D.

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#### WORK EXPERIENCE

# Naver Labs Europe

Grenoble, FR

Research Scientist

Feb 2020 - present

• Summary: Fundamental research in machine learning and computer vision.

## 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. Research published at ICCV, CVPR, NeurIPS and IJCV.

#### 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. Research published at NeurIPS 2018.

## University College Cork

Cork City, IE

Visiting Student at Biomedical Design Research Group

Spring 2015 - Summer 2015

o 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
- o 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, Theano. OS: Linux (Ubuntu). Tools: Vim, Latex
- Languages: English (full working proficiency), Italian (mother tongue).

# COMMUNITY

- Reviewer activity: CVPR (2019, 2020), ICCV (2019), NeurIPS (2019's top 50%), ICML (2020), ECCV (2020)
- Open-source activity: github.com/ricvolpi

# **Publications**

#### Conference Papers

- 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 (to appear).
- 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

• 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: Namkoong H.\*, Volpi R.\*, Learning Invariant Models Using Worst-case Transformations: A Multi-armed Bandit Approach. Under double-blind review.
- 2020: Ragonesi R., Volpi R., Cavazza J., Murino V., Learning Unbiased Models via Mutual Information Backpropagation. Under double-blind review.
- 2020: Zunino A., Bargal S. A., Volpi R., Sameki M., Zhang J., Sclaroff S., Murino V., Saenko K. Explainable Deep Classification Models for Domain Generalization. Under double-blind review.
- 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 major revision at International Journal of Computer Vision (IJCV).
- 2020: Sinha A.\*, Namkoong H., Volpi R., Duchi J., Certifying Some Distributional Robustness with Principled Adversarial Training. Under review at Operations Research.
- 2018: 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. Under major revision at Scientific Reports.

#### Extended Abstracts

- 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.

#### SELECTED TALKS

- 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.