

# Curriculum vitae

## Guglielmo Camporese

(pron. gool-yell-moe)

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### Personal

**Birth** Camposampiero (PD), Italy, on March 8<sup>th</sup> 1993. Italian citizen. Male.  
**Cur. Loc.** Grosswiesenstrasse 87, 8051 Zürich, Switzerland  
**Residence** Via Santa Caterina 4 Interno 1, 35121 Padova, Italy  
**Mobile** (IT) +39 340 6738579 - (CH) +41 078 253 07 22  
**Email** guglielmocamporese@gmail.com  
**Website** guglielmocamporese.github.io  
**Linkedin** linkedin.com/in/guglielmocamporese  
**GitHub** github.com/guglielmocamporese

### Work Experience

04-07/2023 **Research Scientist Intern**  
*Disney Research Studios* - Zürich, Switzerland  
Worked on transfer learning, knowledge distillation, and model compression. Developed a new neural network activation that improves accuracy in different domains, such as implicit neural representation, super-resolution, and visual denoising. Worked also on its efficient implementation in CUDA kernels for PyTorch and TensorFlow 2.

12/2021 - **Applied Scientist Intern**  
09/2022 *Amazon Web Services AI Labs* - Seattle, Washington  
Worked on the Amazon Web Services AI Labs on the Rekognition team in a research project focused on video predictive understanding using deep learning models. In particular, I investigated and innovated how to anticipate and early-recognize events on videos before they occur.

06-09/2020 **Applied Scientist Intern**  
*Amazon Alexa AI* - Turin, Italy  
Worked on improving recognition of speech with disfluencies in the Amazon Alexa Automatic Speech Recognition (ASR) team. During the project, I worked on the multi-lingual modeling of particular speech disorders, mining relevant datasets, designing and training neural network architectures, and delivering high-quality results.

11/2018 - **Deep Learning and Computer Vision Engineer Intern**  
10/2019 *Aquifi Inc.* - Palo Alto, California  
Implemented deep learning systems for anomaly detection on multi-view structured input images on highly imbalanced datasets using state-of-the-art and implementing custom CNNs. Worked with a variety of tools, including Python, TensorFlow, and C++, as well as HTML, javascript, and CSS for experiment visualizations.

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## Education

- 10/2019 - **Ph.D. in Brain, Mind and Computer Science**  
02/2023 *University of Padova, Department of Mathematics and Psychology* - Padova, Italy  
**Thesis:** Prediction of Activities and Visual Concepts Under Complex and Changing Conditions  
**Supervisor:** Lamberto Ballan - **Co-supervisor:** Gianluca Campana
- 2016 - 2019 **M.Sc. in Telecommunications Engineering, 110/110 e Lode**  
*University of Padova, Department of Information Engineering* - Padova, Italy  
**Thesis:** Semantic Segmentation for Visual Inspection  
**Supervisor:** Pietro Zanuttigh
- 2012 - 2016 **B.Sc. in Information Engineering**  
*University of Padova, Department of Information Engineering* - Padova, Italy  
**Thesis:** Algorithms for Sound Synthesis through Physical Modeling  
**Supervisor:** Federico Avanzini
- 2007 - 2012 **Scientific High School Diploma**  
*Liceo Scientifico "Ettore Majorana"* - Mirano, Venezia, Italy

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## Academic Work Experience

- 2020 - 2021 **Teacher Assistant**  
*University of Padova* - Padova, Italy  
Teacher assistant for the machine learning class in the Data Science Master Degree. In particular, I lectured class lessons, prepared the laboratories, and I supervised and evaluated the students for their final project of the course.
- 2019 - 2023 **Thesis Co-Supervisor**  
*University of Padova* - Padova, Italy  
During my Ph.D. I co-supervised 9 Master Students (from the Computer Science and Data Science degree) and 1 Bachelor Student (from the Computer Science degree) in their final thesis.
- 2019 - 2023 **Service**  
I served as a reviewer in top venues such as: ICCV-2023, CVPR-2023, TPAMI-2022, CVPR-2021, ICPR-2020.

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## Publications

- Conference N. Osman, **G. Camporese**, L. Ballan, "TAMFormer: Multi-Modal Transformer with Learned Attention Mask for Early Intent Prediction ", International Conf. on Acoustics, Speech and Signal Processing, Rhodes Island, Greece, 2023. [\[oral\]](#) (ICASSP 2023).
- Conference **G. Camporese**, E. Izzo, L. Ballan, "Where are my Neighbors? Exploiting Patches Relations in Self-Supervised Vision Transformer", British Machine Vision Conference, London, UK, 2022. [\[oral spotlight\]](#) (BMVC 2022). (previously selected as oral spotlight at the "Transformers for Vision Workshop (T4V)" at CVPR 2022, New Orleans, Louisiana.)
- Conference N. Osman, E. Cancelli, **G. Camporese**, P. Coscia, L. Ballan, "Early Pedestrian Intent Prediction via Features Estimation", IEEE International Conference on Image Processing, Bordeaux, France, 2022. (ICIP 2022)
- Conference Y. Guo\*, **G. Camporese\***, W. Yang, A. Sperduti, L. Ballan, "Conditional Variational Capsule Network for Open Set Recognition", International Conference on Computer Vision, Virtual, 2021. (ICCV 2021).

- Conference N. Osman, **G. Camporese**, P. Coscia, L. Ballan, "SlowFast Rolling-Unrolling LSTMs for Action Anticipation in Egocentric Videos", International Conference on Computer Vision, Virtual, 2021. (ICCVw 2021).
- Conference V. Mendelev\*, T. Raissi\*, **G. Camporese**, M. Giollo, "Improved Robustness to Disfluencies in RNN-Transducer Based Speech Recognition", International Conference on Acoustics, Speech and Signal Processing, Toronto, Canada, 2021. (ICASSP 2021).
- Conference **G. Camporese**, P. Coscia, A. Furnari, G. M. Farinella, L. Ballan, "Knowledge Distillation for Action Anticipation via Label Smoothing", International Conference on Pattern Recognition, Milan, Italy, 2020. (ICPR 2020).
- Ph.D. Thesis **G. Camporese**, "Prediction of Activities and Visual Concepts Under Complex and Changing Conditions".
- Ms.C. Thesis **G. Camporese**, "Semantic Segmentation for Visual Inspection".
- Bs.C. Thesis **G. Camporese**, "Algorithms for Sound Synthesis through Physical Modeling".

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## Computer Skills

**Languages and Tools for Machine Learning and Computer Vision** - Python, PyTorch, TensorFlow 2, NumPy, Keras, OpenCV, Scikit-learn, Pandas, Matplotlib, CUDA

**Other Languages and Tools** - C/C++, Git, HTML, Flask, Javascript, Matlab, Mathematica, Arduino

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## Languages

- Italian Mother tongue
- English Full professional proficiency
- French Basic

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## Extra

- 2023 **Certification** - 3D Reconstruction, Multiple Viewpoints, *Coursera*
- 2019 **Certification** - Fundamentals of Reinforcement Learning, *Coursera*
- 2018 **Certification** - Deep Learning Specialization, *Coursera*
- 2018 **Certification** - Sequence Models, *Coursera*
- 2017 **Certification** - Convolutional Neural Networks, *Coursera*
- 2017 **Certification** - Structuring Machine Learning Projects, *Coursera*
- 2017 **Certification** - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, *Coursera*
- 2017 **Certification** - Neural Networks and Deep Learning, *Coursera*
- 2011 **Diploma** - Diploma in Music Theory, *Conservatory Giuseppe Tartini, Trieste*

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## Side Experience

- 2016 - 2018 **Math/Physics Tutor**, *Private lessons* - Padova, Italy
- 2016 - 2017 **Piano Teacher**, *La Casa Della Musica* - Padova, Italy

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## Interests

Deep learning, machine learning, computer vision, playing piano, guitar and synths, producing electronic music.