Curriculum vitae

# Guglielmo Camporese

last update: 2022/09

## Personal

**Birth**: Camposampiero (PD), Italy, on March $8^{th}$ 1993. Italian citizen. Male.

**Residence**: Via Desman 221/e, 35010, Borgoricco (PD), Italy

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**Linkedin**: https://www.linkedin.com/in/guglielmocamporese/

**GitHub**: https://github.com/guglielmocamporese

## Work Experience

**Amazon Web Services AI Labs** — **Seattle, Washington**
*Applied Science Intern* — *2021/12–2022/09*

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.

**Amazon Alexa AI** — **Turin, Italy**
*Applied Science Intern* — *2020/06–2020/09*

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 modelling of particular speech disorders, mining relevant datasets, designing and training neural network architectures and delivering high quality results.

**University of Padova** — **Padova, Italy**
*Machine Learning Teacher Assistant* — *2020/03–2021/03*

Teacher assistant for the machine learning class in the Data Science Master Degree. In particular, I lectured lessons, I prepared the laboratories, and I supervised and evaluated the students for their final project of the course.

**Aquifi Inc.** — **Palo Alto, California**
*Deep Learning and Computer Vision Engineer* — *2018/11–2019/10*

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 experiments visualizations.

## Education

**Ph.D. Student in Brain Mind and Computer Science** — **Padova, Italy**
*University of Padova, Department of Mathematics and Psychology* — *2019–2022*

**MS degree in Telecommunications Engineering, 110/110 e Lode** — **Padova, Italy**
*University of Padova, Department of Information Engineering* — *2016–2019*

**BS degree in Information Engineering** — **Padova, Italy**
*University of Padova, Department of Information Engineering* — *2012–2016*

## Publications

**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. (BMVC 2022). (previously selected as oral splotlight at the "Transformers for Vision Workshop (T4V)" at CVPR 2022, New Orleans, Louisiana.)

**Conference**: Osman, Cancelli, Camporese, Coscia, Ballan, "Early Pedestrian Intent Prediction via Features Estimation", IEEE International Conference on Image Processing, Bordeaux, France, 2022. (ICIP 2022)

**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**: 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**: 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).

## Thesis

**PhD**: "Prediction of Activities and Visual Concepts Under Complex and Changing Conditions". Supervisor: Lamberto Ballan, Co-Supervisor: Gianluca Campana

**MS**: "Semantic Segmentation for Visual Inspection". Supervisor: Pietro Zanuttigh

**BS**: "Algorithms for Sound Synthesis through Physical Modeling". Supervisor: Federico Avanzini

## Selected MS Projects

**Learning Invariances in Speech Recognition.** **[github]**
*Speech Recognition with CNNs and data augmentation.*

**Speech Classification, a dictionary approach with MFCC and Dynamic Time Warping** **[link]**
*Classification of audio commands using dynamic time warping.*

**A Deep Introspection on Generative Adversarial Networks** **[github]**
*Study and implementation of a GAN with Goodfellow's approach.*

**Text Mining Complex Network** **[link]**
*Mining of context informations from a wikipedia web page through the complex network theory.*

## Computer Skills

**Languages and Tools for Machine Learning and Computer Vision**: Python, PyTorch, PyTorch Lightning, TensorFlow, NumPy, Keras, OpenCV, Scikit-learn, Pandas, MatplotLib

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

## Languages

**Italian**: Mother tongue

**English**: Full professional proficiency

## Extra

**2019**: Fundamentals of Reinforcement Learning, *Coursera*

**2018**: Deep Learning Specialization, *Coursera*

**2018**: Sequence Models, *Coursera*

**2017**: Convolutional Neural Networks, *Coursera*

**2017**: Structuring Machine Learning Projects, *Coursera*

**2017**: Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, *Coursera*

**2017**: Neural Networks and Deep Learning, *Coursera*

**2011**: Diploma in Music Theory, *Conservatory Giuseppe Tartini*, Trieste

## Side Experience

**Math/Physics Tutor** — **Padova, Italy**
*Private lessons* — *2016–2018*

**Piano Teacher** — **Padova, Italy**
*La Casa Della Musica* — *2016–2017*

## Interests

- Deep learning, machine learning, computer vision, piano, guitar, electronic music production