Curriculum vitae

Guglielmo Camporese

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Personal

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

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Education

Ph.D. Student in Brain Mind and Computer Science — **Padova, Italy**
University of Padova, Department of Math (Tullio Levi-Civita) and Psychology — *2019–Present*

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

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

Work Experience

Amazon — **Seattle, WA. (remote from Italy)**
Applied Scientist Intern — *2021/12–2022/06*

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 how to anticipate and early recognize events on videos, before they occur.

Amazon — **Turin, Italy**
Applied Scientist 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–Present*

Teacher assistant for the machine learning class at the data science master degree. Prepared and lectured lessons and laboratory for students.

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

Implemented deep learning systems for anomaly detection on highly imbalanced datasets using state of the art CNNs. Worked with a variety of tools, including Python, TensorFlow and C++ as well as html, javascript and css for experiments visualizations.

Publications

Workshop: G. Camporese, E. Izzo, L. Ballan, "Where are my Neighbors? Exploiting Patches Relations in Self-Supervised Vision Transformer", Computer Vision and Pattern Recognition, New Orleans, 2022.

(CVPRW 2022).

Workshop: 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

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, TensorFlow 1.x and 2.x, NumPy, Keras, OpenCV, Scikit-learn, Pandas, MatplotLib

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

Languages

Italian: Mother tongue

English: Professional knowledge

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