

FILIPPO GRAZIOLI

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Education

RWTH Aachen University

Erasmus+ EU International Exchange Program

September 2015 – October 2016

Aachen, Germany

Polytechnic University of Turin

Master of Science (cum laude) in Automotive Engineering

October 2014 – March 2017

Turin, Italy

University of Ferrara

Bachelor of Science (cum laude) in Mechanical Engineering

September 2011 – October 2014

Ferrara, Italy

Experience

NEC Laboratories Europe

Research Engineer - Machine Learning

July 2020 – March 2023

Heidelberg, Germany

- Machine learning for precision immuno-oncology, personalized cancer vaccines and drug discovery.
- Prediction of protein binding with Transformers, Graph Neural Networks and 1D CNNs.
- Multimodal variational models for disease prediction.
- Probabilistic simulations and mixed integer programming (MIP) for vaccine optimization.

Bosch Engineering

Software Engineer - Camera Perception

July 2018 – July 2020

Abstatt, Germany

- Embedded C++ perception algorithms for the Bosch Multi Purpose Camera for ADAS and autonomous driving.
- Road sign recognition.
- ROS prototype development.

Ferrari

Visiting Researcher - Computer Vision

October 2017 – June 2018

Maranello, Italy

- Computer vision for driver monitoring with depth and RGB images.
- Depth estimation with GANs from monocular RGB images.
- Multimodal face verification from RGB and depth.

RWTH Aachen University

Graduate Research Assistant - Software Engineering (May 2017 – September 2017)

June 2016 – September 2017

Aachen, Germany

- Model-based software engineering (UML/SysML) for automotive research.

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Student Research Assistant - Institute of Automotive Engineering (IKA) (June 2016 – April 2017)

- Eye-tracking and driver behaviour understanding for autonomous driving.
- Master thesis: *Development of a Driver State Detector for Autonomous Vehicles*.

Selected Publications

Attentive Variational Information Bottleneck for TCR-peptide Interaction Prediction, F Grazioli, P Machart, A Moesch, K Li, LV Castorina, N Pfeifer, MR Min, Bioinformatics, 2022

Microbiome-based disease prediction with multimodal variational information bottlenecks, F Grazioli, R Siarheyev, I Alqassem, A Henschel, G Pileggi, A Meiser, PLOS Computational Biology, 2022

Face Verification from Depth using Privileged Information, G Borghi, S Pini, F Grazioli, R Vezzani, R Cucchiara, The British Machine Vision Conference (BMVC), 2018

Learning to Generate Facial Depth Maps, S Pini, F Grazioli, G Borghi, R Vezzani, R Cucchiara, International Conference on 3D Vision (3DV), 2018

Technical Skills

Computer vision: Multimodal learning from depth and RGB images, object detection, segmentation, point clouds
Machine learning: Deep learning, geometric deep learning, graph convolutional networks, variational inference, information bottleneck, multimodal learning, deep sets, transformers, out-of-distribution detection
Relevant libraries: PyTorch, PyTorch Geometric, DGL, Tensorflow/Keras, Transformers, Scikit-learn, ROS, OpenCV
Languages: Python, C, C++
Software development: Docker, Git, Scrum, Jira, GitLab, Continuous Integration

Languages

Italian: Mother tongue **English:** Fluent **German:** Fluent **Spanish:** Basic

Interests

Favourite movie directors: David Lynch, Martin Scorsese
Favourite writers: Jorge Luis Borges, Gabriel García Márquez
Hobbies: Photography, swimming, playing guitar, cooking, gardening