Filippo Grazioli

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Education

RWTH Aachen University **September 2015 – October 2016**
Erasmus+ EU International Exchange Program *Aachen, Germany*

Polytechnic University of Turin **October 2014 – March 2017**
Master of Science (cum laude) in Automotive Engineering *Turin, Italy*

University of Ferrara **September 2011 – October 2014**
Bachelor of Science (cum laude) in Mechanical Engineering *Ferrara, Italy*

Experience

NEC Laboratories Europe **July 2020 – present**
Research Engineer - Machine Learning *Heidelberg, Germany*

- Machine learning for precision immuno-oncology, personalized cancer vaccines and drug discovery.
- Prediction of protein binding with Transformers and 1D CNNs.
- Multimodal learning for disease prediction.
- Probabilistic simulations and mixed integer programming (MIP) for vaccine optimization.
- Graph neural networks and knowledge graphs embedding methods.

Bosch Engineering **July 2018 – July 2020**
Software Engineer - Camera Perception *Abstatt, Germany*

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

Ferrari **October 2017 – June 2018**
Visiting Researcher - Computer Vision *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 **June 2016 – September 2017**
Graduate Research Assistant - Software Engineering (May 2017 – 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

Microbiome-based disease prediction with multimodal variational information bottlenecks, **F Grazioli**, R Siarheyeu, 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