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

Cruise   **April 2023 – Present**

Senior Machine Learning Engineer II - Perception   *Munich, Germany*
- 3D object detection.
- Deep learning and LiDAR/camera/radar sensor fusion.

NEC Laboratories Europe   **July 2020 – March 2023**

Research Engineer - Machine Learning   *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   **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

Disentangled Wasserstein Autoencoder for T-Cell Receptor Engineering, T Li, H Guo, **F Grazioli**, M Gerstein, MR Min, NeurIPS, 2023

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 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 object detection, camera/radar/LiDAR fusion, segmentation, depth estimation
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