NICOLA PRETTE

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Linkedin

Work Experience

Deep Learning and Image Processing Engineer   *Mar 2023– Present*

Zirak Information Technology and SW Engineering - Mondovì, Italia

- Development of algorithms regarding computer vision and image processing problems using Deep Learning and traditional techniques

Research Fellow in the field of Deep Learning for Earth Observation   *Sep 2022 – Feb 2023*

Image Processing and Learning Lab – Politecnico di Torino – Torino, Italia

- Development of Deep Learning algorithms for the reconstruction of Earth observation captures, in the scope of the SURPRISE project (SUper-Resolved comPRessive InStrument in the visible and medium infrared for Earth observation applications).
  - Teaching Assistant for the "Courses *Image and video processing and learning"* and *"Statistical learning and neural networks"*

Research Fellow in the field of Compression for Earth Observation Data   *Feb 2018 - Oct 2018*

Image Processing and Learning Lab Lab - Politecnico di Torino – Torino, Italia

- Implementation and study of the performances of the CCSDS 123.0-B-2 compression standard for multi-spectral images, in the scope of the European project EO-Alert.

Academic Training

PhD in Electronic and Communications Engineering   *Oct 2018 – Sep 2022*

Image Processing and Learning Lab - Politecnico di Torino – Torino, Italia
Title: Advanced methods and deep learning for video and satellite data compression

- Researched the possibilities for the use of Deep Learning in the field of Video Compression, and in particular its use to improve the performances of the standard H.265/HEVC. The PhD was financed by RAI – RadioTelevisione Italiana.

Master Degree in Communications And Computer Networks Engineering   *Oct 2015 - Dec 2017*
Grade: 108/110

Politecnico di Torino – Torino, Italia

Master's Thesis   *Apr 2017 – Oct 2017*

Conducted at Sony Europe Limited, Deutschland Stuttgart Technology Center EuTEC – Stuttgart, Germany
Title: Multi-spectral-demosaicking using Deep Neural Networks

- Studied the use of Deep Learning to generate a full color image starting from mosaicked captures with 10 and 16 color channels.

Bachelor's Degree in Telecommunications Engineering   *Set 2012 - Ott 2015*
Grade: 102/110

Politecnico di Torino – Torino, Italia

SKILLS

Programming Languages: Expert: Python **|** Matlab **|** Bash **|** Competent: C
Frameworks & Libraries: Pytorch **|** Tensorflow **|** OpenCV **|** Numpy **|** Matplotlib
Algorithms & Technologies: Deep Learning **|** Machine Learning **|** CNN **|** Networking **|** Signal Processing
Languages: Native: Italian **| Fluent:** English – IELTS Score 8.0 **|**

PUBLICATIONS

· Using CCSDS image compression standard for SAR raw data compression in the H2020 EO-Alert project. – OBPDC 2019
· Onboard Data Reduction for Multispectral and Hyperspectral Images via Cloud Screening – IGARSS 2020
· Deep multiframe enhancement for motion prediction in video compression. – ICECS 2021
· Deep motion-compensation enhancement in video compression. - Electronics Letters, 58, 04 2022.
· Deep Learning Methods for Satellite Compressive Imaging – OBPDC 2022