

EUROPEAN
CURRICULUM VITAE
FORMAT

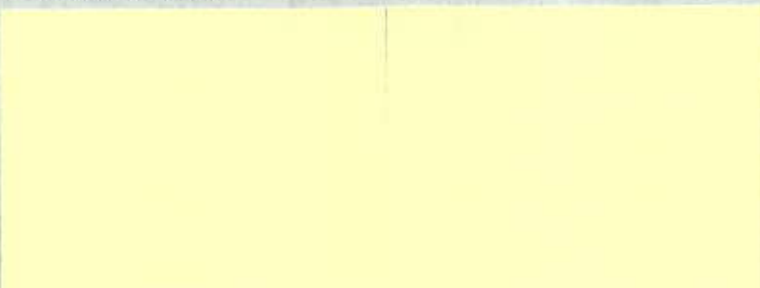


PERSONAL INFORMATION

Name
Address
Telephone
E-mail

Nationality
Date of birth

PASTORINO Martina



EDUCATION AND TRAINING

2020-2023 PhD in Science and Technologies for Electronic and Telecommunication Engineering, University of Genoa and Université Côte d'Azur (with INRIA Nice Sophia Antipolis)
Starting date 1st November 2020.

2020 Internship, University of Genoa and INRIA Nice Sophia Antipolis (April – September)

"Probabilistic graphical models and machine learning methods for remote sensing image analysis".

The research topics proposed in this project are meant to bridge between and combine different ideas from Convolutional Neural Networks (CNNs) and Probabilistic Graphical Models (PGMs) to develop novel methods for remote sensing image classification. Within the project, we shall develop a novel formulation that aims at combining the feature representation capabilities of CNN architectures and the probabilistic modeling capabilities of PGMs to optimize classification accuracy in challenging applications such as those associated with the aftermath of natural disasters.

2019-2020 Master SISEA (Double Degree), Mathematical and Computational Engineering, IMT Atlantique (Ecole Mines-Télécom)

Joint curriculum between the Master Degree in Internet and Multimedia Engineering of the University of Genoa and the SISEA and Engineering Master Programs of IMT-Atlantique. IMT Atlantique is a French graduate engineering school (Grande Ecole). This Master is a collaboration with the University of Rennes-1 and it awards the Research Master Degree SISEA (Master2 "STS", Mention EEEA, parcours "Signal Image Systemes Automatique"). I followed the SISEA program through the advanced courses of TAF "Mathematical and Computational Engineering" at IMTA, and I ranked fifth out of 42 students in 2020.

2018-2020 Master Degree in Internet and Multimedia Engineering, University of Genoa
110/110 cum laude and right of publication ("dignità di stampa") (24th July 2018) with the thesis "A Novel Method for Semantic Segmentation of Remote Sensing Images Combining Hierarchical Probabilistic Graphical Models and Deep Convolutional Neural Networks".

2018-2020 STSI Master Level, IANUA

IANUA-ISSUGÉ is the Institute of Higher Studies of the University of Genoa. It supports the best 10% of the students of each faculty of the University of Genoa (<http://www.ianua.unige.it>). STSI stands for "Sciences and Technologies for Information Science". I attended the following courses:

- New Technologies applied to High Speed

- The value of Data in Industry 4.0
- Knowledge Management
- Marketing and Communication b2b
- Interaction technologies and neuroengineering
- Perspectives and challenges in the world of the industries

2016-2018 STSI First Level, IANUA-ISSUGE

For the First Level (done during the second and the third year of the Bachelor Degree), I attended the following courses:

- Quantum Information Processing
- Applied Mathematical Modeling
- Organization Planning
- Decision Making
- Effective Communication
- Contracts and Company Law
- Innovation Management
- Interplanetary Mission
- Nanotechnologies and Nanomaterials
- Logic
- Visual Culture
- Business Plan and Economic Management

2015-2018 Bachelor's degree in Electronic Engineering and Information Technology, University of Genoa

110/110 cum laude (24TH July 2018) with the thesis "Regularization Methods for Image Restoration".

2010-2015 High School Diploma, Scientific High School "Blaise Pascal" Ovada (AL)

PROJECTS

2020 Semantic Segmentation of Remote Sensing Images combining Hierarchical Probabilistic Graphical Models and Deep Learning, University of Genoa, INRIA Nice Sophia Antipolis, and IMT Atlantique

Development, implementation, and experimental validation of a novel method combining deep learning techniques and stochastic models for the task of image classification of satellite images of urban areas. The objective was to envision a new model that allowed to obtain accurate results in the classification of remote sensing images by exploiting the advantages of both of the aforementioned techniques (state-of-the-art accuracy for deep learning and predictions with spatial consistency for stochastic models) while avoiding the use of the huge amount of data needed for deep learning models to work. Programmed in Python and Pytorch.

2020 Computational Imaging Project, IMT Atlantique

Computational Imaging project which consisted in the implementation of a Neural Style Transfer based on discriminative Convolutional Neural Networks (CNN) and Markov Random Field (MRF) regularization. Programmed in Python.

2020 Implementation of a Tracking Algorithm, IMT Atlantique

The objective of the project was to perform object tracking with several video sequences marked by different characteristics and challenges, such as occlusions or radical shape changes. It consisted in the implementation and study of a GOTURN tracking algorithm programmed in Python.

2019-2020 Multimodal Image Registering for the biodistribution of a gene therapy drug in the brain of a non-human primate, IMT Atlantique

The project aims to adapt a segmentation approach to identify fluorescent background noise cells and define the appreciation criteria for registration of biomedical images.

2019 Development Project in Machine Learning, IMT Atlantique

Implementation and study of the performances of different methods of Binary Classification in the field of Supervised Machine Learning. Programmed in Python on two different datasets.

2019 Parallel Computing in Julia, IMT Atlantique

Study of embarrassingly parallel problems with JuliaLang in the field of Hyperspectral Imaging for Blind Source Separation problems with the implementation of Projected Gradient Descent.

2019 Laboratory Sessions of Deep Learning, IMT Atlantique

MNIST classification performed by a Multi-layer Perceptron (MLP) and by a Convolutional Neural Network (CNN). Use of Pooling Layers and several Activation functions. Implementation of Recurrent Neural Network (RNN) to fit multivariate time series (Lorentz-63 chaotic model), with an autoregressive model and a (Long Short-Term Memory) LSTM architecture.

2019 Computer Graphics Project, University of Genoa

Study of the interaction with the user via mouse and keyboard, control of timing and management of music and sound effects (mixing). Programmed with OpenGL in C++.

2018 Regularization Methods for Image Restoration, University of Genoa

Treatment of ill-posed problems in the context of Image Restoration. The study focuses on iterative methods to solve systems of linear equations. In particular, the Landweber, Steepest Descent and Conjugate Gradient methods are discussed in detail and implemented using MatLab code.

**PERSONAL SKILLS
AND COMPETENCES**

MOTHER TONGUE Italian

OTHER LANGUAGES English, French, Spanish

Cambridge English Level 2 Certificate in ESOL International (Advanced C1)
Cambridge Assessment Language, Reference n: 185IT0090004
Grade B (199/210) – May 2018

French course (B2), IMT Atlantique
2019-2020

Diplôme D'Études en Langue Française (DELF B1)
Ministère de l'Éducation Nationale et de la Jeunesse – République Française
N° de diplôme: 039011-201811T-4184085
November 2018

ORGANISATIONAL SKILLS 2019-2020 Representative of the Students, STSI Master Level, IANUA, University of Genoa

DRIVING LICENCE Patente di guida Repubblica Italiana (B)