



# Francesco Pelosin

11/02/1992

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Italian

## Profile

Hi! I'm Francesco! I got a Ph.D. in Machine Learning and Computer Vision and my passion is applying my knowledge in the industry world to create new technology pipelines. In a nutshell I'm a diligent worker and a problem solver. I'm very quick at developing proof of concepts, and a bug hunter. I possess good communication skills, also in international environments. I'm naturally inclined toward curiosity and I like to try new things. I'm a sensible person and I do my best to maintain a gentle working environment. Although I'm very independent but I also enjoy collaborate in a team.

## Education

2018 – 2022

### **Ph.D. Computer Vision/Continual Learning,**

Italy/Spain

*Ca' Foscari University, Italy / Computer Vision Center, Spain*

Topics: Machine Learning, Deep Learning, Incremental Learning

Supervisor Ita: Prof. **Andrea Torsello**

PI Spain: **Joost van de Weijer**

I collaborated for 9 months (~3 months in-site + 6 remotely) at the Computer Vision Center (CVC) Barcelona, Spain working on continual learning for computer vision. Here the [link](#) to my thesis

2015 – 2018

### **M.Sc. AI - Data Management and Analytics, Ca' Foscari University**

Italy

Final Score: 110L (Full Marks with Distinction).

The thesis has been published in Pattern Recognition (Q1 Journal).

2011 – 2015

### **B.Sc. Computer Science, Ca' Foscari University**

Italy

Final Score: 99

Thesis: I developed a Computer Vision Optical Modem to perform camera calibration from distance

## Professional Experience

10/2023 – present

### **Deep Learning Research Engineer, Covision Lab**

Brixen, Italy

#### Role:

I'm a project lead for one of Covision Lab partner (Microtec) focusing on decreasing labeling costs for semantic segmentation systems

#### Main project:

Prototyped in 4 months a computer vision system based on self-supervised learning for semantic segmentation. The pipeline allows our customer to decrease labeling costs up to 95%. We crafted also a paper based on the project that has been accepted to ECCV2024 VISION workshop organized by Apple.

#### Side projects:

Provided computer vision routines to create new auto-labeled datasets and exploring Diffusion Models to generate synthetic data.

#### Soft skills:

I co-advise the selection of new candidates that will join the team as Deep Learning engineers

10/2022 – 10/2023

### **AI Research Scientist, Leonardo S.p.a.**

Rome, Italy

#### Role:

I was part of the AI R&D team of Leonardo, the defense company of the Italian government. My duty was developing prototypes (up to TRL 4).

#### Main Project:

During my experience I focused on building a continual learning strategy based on neural network submodules. The work has been accepted as oral to AAAI2024 in Vancouver (Canada). We also prototyped a streamlit app for Automatic Image Annotation exploiting CLIP embeddings as core mechanism. Finally we developed a new methodology for Machine Unlearning, the work as been submitted in WACV 2025

2018	<b>Computer Vision Research Engineer, <i>Digital Strategy Innovation s.r.l.</i></b> For 6 months, I worked on an industrial project for a big GDO company. The project was meant to create a computer vision system based on YOLO detecting out-of-stock products in supermarket shelves.	Venice, Italy
2018 – 2022	<b>Teaching Assistant / Tutor, <i>Ca' Foscari University</i></b> For several years I was teaching assistant for the course of Computer Architecture, I tutor students, create and correct exams.	Italy

## Skills

### Deep Learning / ML Tools

*Pytorch, Jupyter, sklearn, numpy, wandb, dvc, huggingface (basic)...*

### AI Frameworks

*docker, streamlit, git, conda, virtualenv, vim, tmux*

### Languages

Python (proficient 5+ years), C (basic), C++ (basic)

### Interested in

LLMs, Prompt Injection, Prompt Tuning, Rust, x86 (Intel Syntax), Cybersecurity

### Others

*Hiring, Candidate Interviews*

### DL Techniques / Models

Transformers (swin, vits), Convolutional Neural Networks, Distillation, Masked Autoencoding, Stable Diffusion

## Awards

21/06/2022	<b>Runner-Up Paper Award, <i>Continual Learning CVPR 2022 Workshop</i></b> Our paper Towards Exemplar-Free Continual Learning in Vision Transformers: An Account of Attention, Functional and Weight Regularization won the runner-up paper award in CLVISION workshop at CVPR 2022 New Orleans, USA
2020	<b>Winner European Copernicus Hackathon, <i>European Commission</i></b> We won the possibility to join the European accelerator for startups and a money prize. Here's a video of a cophack. We were awarded by Giorgio Saccoccia, president of Italian Space Agency (ASI) and relevant figures in the space economy scene. Then, we embraced the journey to join the startup accelerator.
2017	<b>1st Place - Hacking Competition (CTF), <i>Ca' Foscari University</i></b> During my M.Sc. I won the internal hacking competition held as a course. <Here> some live asciicasts of me hacking into enemy machines (the writeups are hidden, but I have them). Then, I got recruited to join the cybersecurity research group <c00kies@venice> and participate to international capture the flag (CTF) competitions (FAUST 2017).

## Publications (first authors are underlined)

### **DUCK: Distance-based Unlearning via Centroid Kinematics, *submitted WACV2025***

Marco Cotogni, Jacopo Bonato, Luigi Sabetta, Francesco Pelosin, Alessandro Nicolosi

### **Dynamic Label Injection for Imbalanced Industrial Defect Segmentation, *Poster - VISION Workshop (ECCV 2024)***

Emanuele Caruso, Francesco Pelosin, Alessandro Simoni, Marco Boschetti

### **MIND: Multi-Task Incremental Network Distillation,**

*Oral - Association for the Advancement of Artificial Intelligence (AAAI 2023)*

Jacopo Bonato, Francesco Pelosin, Luigi Sabetta, Alessandro Nicolosi

### **Simpler Is Better: off-the-shelf Continual Learning through Pretrained Backbones,**

*Poster - Workshop Transformers for Vision T4F (CVPR 2022)*

Francesco Pelosin

### **Towards Exemplar-Free Continual Learning in Vision Transformers: an Account of Attention, Functional and Weight Regularization, *Poster - Workshop of Continual Learning (CVPR 2022)***

Francesco Pelosin, Saurav Jha, Andrea Torsello, Bogdan Raducanu, Joost van de Weijer

### **Smaller Is Better: an analysis of quality/quality trade-off in rehearsal continual learning,**

*Oral - World Conference of Computational Intelligence 2022 - Proceedings in IJCNN*

Francesco Pelosin, Andrea Torsello

### **Incremental Automatic Image Annotation,**

*Ital-IA 2023: 3rd National Conference on Artificial Intelligence - Industrial Track*

Luigi Sabetta, Francesco Pelosin, Giulia Denevi, Alessandro Nicolosi

### **Unsupervised semantic discovery through visual patterns detection, *S+SSPR, 2021***

Francesco Pelosin, Andrea Gasparetto, Andrea Albarelli, Andrea Torsello

### **Separating Structure from Noise in Large Graphs Using the Regularity Lemma, *Pattern Recognition, 2020***

Marco Fiorucci, Francesco Pelosin, Marcello Pelillo

## Other Courses

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2019	<b>LHC CERN / Microsoft Azure Hackathon</b> , <i>Fondazione Bruno Kessler</i> 2 days hackathon/training we analyzed and modeled CERN's Large Hadron Collider data. After wrangling data with ROOT we exploited Azure auto ML to build a model to detect out-of-distribution anomalies of physics experiments. Link (I'm the guy at slide 7 with the fish t-shirt)	Trento, Italy
2020	<b>ACDL 2020 Advanced Course on Data Science &amp; Machine Learning</b> 5 days summer school. Topics covered: Deep Learning / Graph Neural Networks. At the end of the summer school I had to reproduce the results of a research paper <a href="https://acdl2022.icas.cc/">https://acdl2022.icas.cc/</a>	Certosa di Pontignano