Gianmarco Scarano

Gender: Male

WORK EXPERIENCE

06/2024 – 12/2024 Rome, Italy
AI ENGINEER INTERN SMART-I S.R.L.

Designed and implemented a reidentification (Re-ID) system which accurately tracks a target vehicle across complex camera networks using advanced CNN Feature Extraction protocols and sophisticated Deep Learning algorithms for Multi-Camera Trajectory Linking.

06/2021 – 01/2022 Altamura, Italy
.NET WPF JUNIOR DEVELOPER SIOPEN S.R.L.S.

Worked alongside software developers to design and launch Windows Presentation Foundation (WPF) applications to customers for orders management etc.

EDUCATION AND TRAINING

09/2022 – 01/2025 Roma, Italy
MASTER'S DEGREE IN ARTIFICIAL INTELLIGENCE AND ROBOTICS (II LEVEL) Università degli Studi di Roma "La Sapienza"

Address Via Eudossiana, 18, 00184, Roma, Italy ⎪ **Website** https://corsidilaurea.uniroma1.it/en/corso/2022/30431/home

08/2018 – 04/2022 Bari, Italy
BACHELORS DEGREE IN COMPUTER SCIENCE AND TECHNOLOGIES FOR SOFTWARE PRODUCTION DEGREE (I LEVEL) Università degli Studi di Bari "Aldo Moro"

Address Via Edoardo Orabona, 4, Campus Universitario "Ernesto Quagliariello", 70125, Bari, Italy ⎪

Website https://www.uniba.it/ricerca/dipartimenti/informatica

07/2018 – 09/2018 Dublin, Ireland
TURISM, BUSINESS & MARKETING COURSE Atlas Language School

Course aimed at learning English tourism and marketing knowledge, through a language level equal to B2 (First) of Cambridge.

Address House 34A, Richmond St S, Portobello, D02 YH79, Dublin, Ireland

08/2017 – 10/2017 Willingham, United Kingdom
B1 PREPARATION Cambridge Melchior College (CMC)

Course for PET (B1 Preliminary) exam, entirely in English.

Address 50 Church St, CB24 5HT, Willingham, United Kingdom

08/2013 – 07/2018 Altamura, Italy
ACCOUNTANCY QUALIFICATION I.T.E.S. F.M. Genco

Address Piazza Raffaele Laudati 1, 70022, Altamura, Italy ⎪ **Website** http://itesgenco.edu.it/

LANGUAGE SKILLS

Mother tongue(s):   **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Python │ Python (Tensorflow, Keras and Pytorch) │ Java │ Git │ Microsoft Office │ Visual Studio - Visual C# │ Anaconda Spyder/Jupyter │ IntelliJ IDEA │ Google (Google Docs, Google Colaboratory, Google Sheets) │ Google Cloud Platform

PROJECTS

06/2024 – 12/2024
Vehicle Re-Identification through ResNet-based Feature Extraction and Spatio-Temporal constraints

Designed and implemented a reidentification (Re-ID) system which accurately tracks a target vehicle across complex camera networks using advanced CNN Feature Extraction protocols and sophisticated Deep Learning algorithms for Multi-Camera Trajectory Linking.

Link https://github.com/SlimShadys/Vehicle-ReID

12/2023 – 02/2024
DL - Neural inverted index for fast and effective information retrieval

The task for this project is to build a model f that given a Query q as input, returns a ranked list of Document IDs. There should be a unified model trained to replicate the behavior of an "Index" built on a corpus of Documents, which will be used to "Retrieve" relevant Documents. The model is trying to address some issues from the ones present in the literature, along with novelties that make the project unique.

Link https://github.com/SlimShadys/Neural-Inverted-Index-for-IR

09/2023 – 02/2024
NLP - Similarity, Embeddings and Multimodality

In this study, I investigate what are the key features within the NLP domain, spanning from lexical to semantic similarity.
I delve into sense and sentence embeddings, leveraging techniques such as Word2Vec and BERT.
Concluding the analysis, I'm currently focusing on Commonsense Knowledge and Multimodality, exploring both Text-To-Image and Image-To-Text processes, uncovering their strenghts and weaknesses.

01/12/2023 – 22/12/2023
SoftKick - Rocket League through Reinforcement Learning

In this work, I aimed at implementing the Proximal Policy Optimization (PPO) algorithm from Reinforcement Learning literature in the Psyonix game 'Rocket League'. The agent successfully performs the kick-off action without any input from the user, being trained over 70M timesteps of the game itself. The algorithm has been re-implemented starting from the SB3 (Stable-Baselines3) library.

Link https://github.com/SlimShadys/SoftKick

13/09/2023 – 26/09/2023
2D Multi-Robot Simulator

The task is to implement a 2D Robot simulator, considering some non-trivial modifications such as: ROS support, CMakeList parsing and dynamic loading of Robots in the simulator through JSON. The whole project was developed in C++.

Link https://github.com/SlimShadys/RobotProgramming/tree/master/Project

05/2023 – 06/2023
Reimplementation of the 'Deepfake Video Detection through Optical Flow based CNN' paper on PyTorch

In this work, I had to re-implement this paper (https://openaccess.thecvf.com/content_ICCVW_2019/papers/HBU/Amerini_Deepfake_Video_Detection_through_Optical_Flow_Based_CNN_ICCVW_2019_paper.pdf), training and evaluating the ResNet-50/VGG-16/ViT/DeiT models on the FaceForensics++ Dataset in order to detect Deepfake videos starting from optical flow images.

Link https://github.com/SlimShadys/DeepFakeDetectionOF

12/2022 – 02/2023
Reimplementation of the 'Adversarial Training for Free!' paper on PyTorch

In this work, I had to reimplement the following paper using PyTorch: https://arxiv.org/pdf/1904.12843.pdf , where I was able to train a robust network against adversarial attacks through gradients propagations using the 'Free Adversarial Training' algorithm proposed in the paper itself.

Link https://github.com/SlimShadys/FreeAdversarialTraining

01/2023 – 01/2023
Neural Network Model for Image Classification

I had to choose a random personal Dataset and solve an Image Classification task.
The dataset chosen contains LEGO bricks, while as for the model, the VGG16 architecture reached 91.35% of accuracy.
Everything has been developed using the Tensorflow/Keras library.

Link https://github.com/SlimShadys/MachineLearning/blob/main/test/Homeworks/2. Image Classification/ML Homework 2 - 2047315.pdf

11/2022 – 12/2022
Classification/Regression problem using Machine Learning

Given a Dataset about UAVs conflicts, I had to estimate the total number of conflicts between UAVs and predict the minimum CPA (Closest Point of Approach) among all possible pairs of UAVs.
I had to solve this task only using Machine Learning algorithms through the Sklearn library.

Link https://github.com/SlimShadys/MachineLearning/blob/main/test/Homeworks/1. Multi-UAV Conflict Prediction/ML Homework 1 - 2047315.pdf

11/2021 – 04/2022
Neural Network Model for Crowd Counting

Using PyTorch framework, I was able to train a Neural Network model which is able to predict the total number of people in a crowded image. The Dataset used is the VisDrone Dataset, while the model, called TransCrowd, relies on a Vision Transformer (ViT).

Link https://github.com/SlimShadys/VisDrone21

12/2020 – 01/2022
Android Game Development

Revamped an old retro-game called Arkanoid on Anroid, using Material Design patters, new engines and Google Firebase API for rankings algorithms.

Link https://github.com/SlimShadys/Arkanoid

12/2021 – 03/2022
Neural Network Model for Emotion Recognition

Trained and validated a Neural Network model using PyTorch Framework, which is able to recognize the emotion of the speaker through spectrograms processing algorithms.

Link https://github.com/SlimShadys/SysAg2022