

# Dario Cioni

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## Education

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### University of Florence

Florence, Italy

#### MASTER'S IN ARTIFICIAL INTELLIGENCE

09/2021 - 04/2024

- 110/110 with Honours (First Class Honours)
- Supervisors: Prof. Lorenzo Seidenari, Prof. Andrew David Bagdanov
- Co-Supervisors: Prof. Ioannis Patras, Dr. Christos Tzelepis

### University of Florence

Florence, Italy

#### BACHELOR IN COMPUTER SCIENCE ENGINEERING

09/2015 - 04/2021

- Supervisor: Prof. Andrew David Bagdanov

## Research & Professional Experience

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### RESEARCH

#### Queen Mary University of London - Centre for Multimodal AI

London, UK

##### SUPERVISORS: PROF. IOANNIS PATRAS, PROF. LORENZO SEIDENARI

10/2023 - 02/2024

- **Thesis:** "Forensic Techniques for Synthetic Image Detection and Attribution"
- **Publication** "Are CLIP Features all you need for Universal Synthetic Image Origin Attribution?" (Best Workshop Paper Award)  
Employed general, pre-trained features extracted from Vision Foundation Models (CLIP, DINOv2) for Open Set Synthetic Image Attribution, obtaining state-of-the-art attribution performance (98% Acc., 81% OSCR) on Diffusion-generated images.
- **Roles:** Project ideation, literature review, development and training of all experiments, paper writing

#### University of Florence - Media Integration and Communication Center

Florence, Italy

##### SUPERVISOR: PROF. ALBERTO DEL BIMBO

02/2023 - 07/2023

- **Publication:** "Diffusion Based Augmentation for Captioning and Retrieval in Cultural Heritage" (ICCVW 2023)  
Devised a Diffusion-based augmentation pipeline with multimodal conditioning to augment Cultural Heritage datasets for downstream Vision-Language tasks, improving performance on Image Captioning and Multimodal retrieval
- **Roles:** Development and training of all experiments, paper writing

### University of Florence

Florence, Italy

##### SUPERVISOR: PROF. ANDREW DAVID BAGDANOV

09/2020 - 04/2021

- **Thesis:** "Convolutional Neural Networks for Object counting in thermal imagery"  
Employed features extracted from a domain adapted YOLOv3 network to perform privacy-preserving Crowd Counting, obtaining greater performance ( $-2$  MSE) than raw detections and better generalizability to other thermal domains ( $-4.2$  MSE)
- **Roles:** Development of all experiments and training, writing

### PROFESSIONAL

#### PwC Italy

Milan, Italy

##### AI ENGINEER @ AI CENTER OF EXCELLENCE

07/2024 - Present

- Developed and improved Retrieval-Augmented Generation pipelines by optimizing efficiency, retrieval and generation performance, devised an internal LLM evaluation pipeline for RAG.
- Currently working on Text-to-Video Diffusion Models and DiTs for long video generation

#### Hermes Trade

Florence, Italy

##### PRODUCT OWNER, SOFTWARE DEVELOPER

08/2015 - 09/2021

- Student worker during Bachelor's studies
- Designed and followed the development of ERP/CRM application as Backend Developer and Data Engineer, managing all phases of software development lifecycle
- Led the development as Product Owner in an Agile team of 8 people, translating clients' needs into actionable User Stories

## Publications

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**Cioni, D.**, Tzelepis, Christos, Seidenari, Lorenzo, and Patras, Ioannis (2024). "Are CLIP features all you need for universal Synthetic Image Origin Attribution?". **[Best Workshop Paper Award]** To appear in Proceedings of the European Conference on Computer Vision Workshops (ECCVW 2024)

**Cioni, D.**, Berlincioni, L, Becattini, F., Del Bimbo, A. "Diffusion Based Augmentation for Captioning and Retrieval in Cultural Heritage". Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops (pp. 1707-1716). (ICCVW 2023)

## Awards, Fellowships, & Grants

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2024 **Best Workshop Paper Award**, TWYN @ ECCV 2024  
2023-2024 **AI4Media Junior Fellow**, AI4Media  
2021-2023 **Regional Scholarship**, ARDSU Toscana

## Presentations

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**Cioni, D.** 2024. Best paper award talk "Are CLIP features all you need for universal Synthetic Image Origin Attribution?", Trust What You learn (TWYN) workshop @ ECCV2024, Milan, Italy.

## Other Projects

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### Deep Compression

*ciodar/deep-compression*

#### PAPER REPLICATION

Replicated from scratch the paper "Deep compression: Compressing deep neural networks with pruning, trained quantization and huffman coding" (Han et al., 2015). Developed and trained the 3-step compression pipeline on an ImageNet subset and MNIST dataset.

### Deep Learning Applications

*ciodar/deep-labs*

#### PROJECT COLLECTION

Collection of paper replications of Computer Vision, NLP and Adversarial Machine Learning fields developed during Deep Learning Application course.