Dario Cioni

ciodar.github.io | ciodar | dario-cioni

Education

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

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 - TWYN @ ECCV2024*)
- 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 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 for Object Detection to perform privacy-preserving Crowd Counting, obtaining greater performance than raw detections and better generalizability to other thermal domains
- **Roles**: Development and training of all experiments, 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 generation

Hermes Trade *Florence, Italy*

Product Owner, Software Developer *08/2015 - 09/2021*

- Designed and followed the development of an ERP/CRM application as Database Developer and Backend Developer for 5 main clients, 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

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

2024 **Best Workshop Paper Award**, TWYN @ ECCV 2024

2023-2024 **AI4Media Junior Fellow**, AI4Media

2021-2023 **Regional Scholarship**, ARDSU Toscana

Presentations

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

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 and Adversarial training fields developed during Deep Learning Application course