

DARIO CIONI

AI Researcher · Machine Learning Engineer

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🔗 ciodar

🌐 dario-cioni

📍 Milan, Italy

WORK EXPERIENCE

AI Developer @ AI Center of Excellence

PwC, Milan, Italy

🔧 Python LLMs RAG FastAPI

📅 Jul. 2024 - Present

- Developed and optimized 3 Retrieval-Augmented Generation (RAG) pipelines leveraging Large Language Models (LLMs)

Research Assistant @ MMV group

Queen Mary University of London, London, UK

🔧 Python Pytorch Generative Models Deepfake Detection Vision Foundation Models

📅 Oct. 2023 - June 2024

- Research on Synthetic Image Attribution under the guidance of Prof. Ioannis Patras and Dr. Christos Tzelepis to be published at TWYN@ECCV2024

ICT Consultant, Software Developer

Hermes Trade s.r.l, Florence, Italy

🔧 SQL ASP.Net Python Angular Hitachi Pentaho

📅 Aug. 2015 - Sep. 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 and cutting support costs by 30 %
- Worked as Product Owner in an Agile team of 8 people, translating clients' needs into actionable User Stories
- Built an ETL pipeline (Pentaho DI) for continuous database update during the migration phase, increasing velocity by 50%

EDUCATION

M.S. in Artificial Intelligence

University of Florence

📅 110/110 with Honour (First Class Honours)

📅 Sep. 2021 - Apr. 2024

- Thesis: "Forensic Techniques for Detection and Attribution of Synthetic Images"
- Main subjects: Deep Learning, Statistical Learning, Data Mining, Computer Vision, Generative Models, Big Data Architectures

B.S. in Computer Science and Engineering

University of Florence

Thesis "Convolutional Neural networks for Object counting in thermal imagery"

📅 Sep. 2015 - Apr. 2021

- Performed transfer learning on features extracted by a YOLOv3 network trained on thermal imagery of different domains
- Main subjects: Databases, Algorithms and Data Structures, Artificial Intelligence, Theory of Computation, Software Engineering

ACHIEVEMENTS

ISO 56000 Innovation Management 📄

Florence, Italy

Completed Innovation Management course, presenting at Adriano Olivetti's 120th anniversary day seminar held in Florence 📅 Jan. 2022

PROJECTS & PUBLICATIONS

Are CLIP features all you need for Universal Synthetic Image Origin Attribution? 📄

TWYN @ ECCV 2024

🔧 Python Deepfake Detection Open Set Recognition Vision Foundation Models

🔗 ciodar/UniversalAttribution

- Leveraged Vision Foundation Models to perform Open-Set Attribution of Diffusion-generated synthetic images, resulting in a 20% increase in Open Set OSCR and a 5% rise in closed-set accuracy compared to existing baselines

Diffusion Based Augmentation for Captioning and Retrieval in Cultural Heritage 📄

ICCV 2023 4th Workshop on e-Heritage

🔧 Pytorch Lightning Python Diffusion Models Transformers Image Captioning Image Retrieval

🔗 ciodar/cultural-heritage-diffaug

- Used Diffusion models to perform 8x augmentation of Cultural Heritage datasets for Image Captioning and Retrieval

Deep Compression

Paper replication

🔧 Pytorch Lightning Python Neural Network Compression Image Classification

🔗 ciodar/deep-compression

- PyTorch Lightning replication of "Deep compression: Compressing deep neural networks with pruning, trained quantization and Huffman coding" - Song Han et al., 2015
- Obtained paper results within 1% error on smaller-scale datasets, replicating from scratch the 3-step procedure described in paper

Deep Learning Portfolio

Paper replication

🔧 Pytorch Python Image Classification Natural Language Processing OOD-Detection

🔗 ciodar/deep-labs

Collection of Deep Learning projects replicating results of foundational papers in each area

- Image Classification:** Replicated small-scale results of ResNets, Image Localization through Fully Convolutional networks and Class Activation Maps
- Natural language processing:** Sequence prediction, Sequence generation and Question Answering with Transformer nets
- Adversarial Learning & OOD Detection:** Out-Of-Distribution detection, evaluated FGSM attack and trained an image classification network for robustness against adversarial attacks