

Pierpasquale Colagrande

Artificial Intelligence Engineer
Milan, Italy

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🇮🇹 native
🇬🇧 fluent

Experience

Artificial Intelligence Engineer

Blimp.ai • Full-time

Feb 2024 - Present

Milan, Italy

R&D for the company's flagship product, a computer vision sensor designed for urban monitoring and analysis

- Optimized and streamlined codebase for reduced complexity and increased inference speed
 - Increased inference speed by 130% on NVIDIA Jetson Nano (from 3 to 7 FPS)
 - Inference speed further increased by 155% through codebase porting to newer NVIDIA Jetson Orin Nano (from 7 to 18 FPS)
- Developed and optimized AI models for object detection and tracking
 - Achieved 26% increase in accuracy of people counting models in challenging conditions by hyperparameter fine-tuning
 - Further increased people counting accuracy by 30% by upgrading from MobileNetV2+SORT to Ultralytics YOLOv11-Small
 - Achieved 63% accuracy (mAP50-95) on detection of additional objects by fine-tuning YOLOv11-Small
- Trained, tested, and deployed image classification networks
 - Achieved 92% accuracy on staff member classification
- Created, cleaned, and prepared datasets for image classification and object detection
- Reduced offline sensors by 65% by designing and developing a robust input module for reliable IP camera connectivity and frame acquisition

Development of additional features

- Created and maintained an updater tool for seamless deployment of packages, patches and new features to sensors in production
- Created and maintained a GUI-based tool for remote sensor management
- Developed REST APIs to deliver features tailored to clients' needs

Data Scientist

Lutech • Full-time

May 2023 - Jan 2024

Cinisello Balsamo, Italy

R&D AI projects

- AI-driven MRI analysis for assisting neurodegenerative disease diagnosis
 - Designed and developed a Proof of Concept (PoC) computer vision system to assist in diagnosing neurodegenerative diseases
 - Fine-tuned deep learning vision models (CNNs, ViTs) for detection and classification on MRI images & multimodal datasets using Hugging Face
- AI-driven hydraulic plant automation and optimization
 - Designed and developed an intelligent pump automation system leveraging Reinforcement Learning and Physics-Informed Deep Learning
 - Created algorithms to convert hydraulic plant schematics into Deep Neural Network (DNN) architectures via modular building blocks
 - Implemented and trained custom neural networks for predictive, adaptive and efficient plant management

AI consulting projects

- Delivered Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG) solutions, including chatbots and text document analysis
- Implemented vision systems with Vertex AI and Google Cloud Platform
- Built CI/CD pipelines using Docker, Kubernetes, and MIA-Platform

Master's Thesis Intern

Univrses • Internship

Mar 2022 - Jul 2022

Stockholm, Sweden

R&D of a copy-paste data augmentation method for generating synthetic object detection datasets, including training experiments using the company's pipeline

Education

Artificial Intelligence

University of Bologna • Master's Degree

Sep 2019 - Feb 2023

Bologna, Italy

Relevant courses: Machine & Deep Learning; Natural Language Processing; Computer Vision; Reinforcement Learning; Knowledge Engineering;

Probability and Statistics

GPA: 3.73/4

Computer Science

University of Bari • Bachelor's Degree

Sep 2015 - Apr 2019

Bari, Italy

Relevant courses: Algorithms and Data Structures; Databases; Object-Oriented Programming; Software Engineering; Web Development

GPA: 3.86/4

Publications

CRISPRLearner: A Deep Learning-Based System to Predict CRISPR/Cas9 sgRNA On-Target Cleavage Efficiency

MDPI, Electronics • December 2019

G. Dimauro, P. Colagrande, R. Carlucci, M. Ventura, V. Bevilacqua, D. Caivano

Projects

MPRNet: CNN for Super Resolution

Sep - Dec 2022

Deep Reinforcement Learning for Atari 2600

Jul - Sep 2022

BERT Fine-tuning for Question Answering

Jan - Apr 2021

Conditional GAN for Face Generation

Apr - Jul 2020

More on  GitHub

Technical & Soft Skills

Artificial Intelligence: Image Classification, Object Detection and Tracking, Embedded and on-edge AI, CNNs, Transformers, GenAI, AI Agents, LLMs, RAG, Reinforcement Learning, Machine & Deep Learning
Languages: Python, Shell Scripting, HTML/CSS, PHP, SQL, JavaScript, C, C++, Java, Scala

Cloud & Database: Google Cloud Platform, Vertex AI, SLURM, Dremio

DevOps & MLOps: Git, GitHub, GitLab, BitBucket, PyTest, Docker, Kubernetes, GitHub Actions, CircleCI, Wandb, TensorBoard

Frameworks & Libraries: PyTorch, TensorFlow, OpenCV, Ultralytics, NVIDIA Jetson, TensorRT, Keras, OpenAI, OpenAI Gym, Scikit-learn, HuggingFace, Pandas, NumPy, Flask, FastAPI

Agile: Scrum, Kanban, Jira, Confluence

Soft Skills: Problem Solving, Leadership, Self-learning, Proactivity, Curiosity, Ambition, Teamwork, Self-promotion, Attention to detail