

Professional Profile

Senior Computer Vision Engineer with a PhD in Theoretical Physics, proficient in deep learning architectures, representation learning and real-time AI applications. Proven track record in developing intelligent surveillance systems, biometric retrieval systems, automatic quality control pipelines in industry 4.0.

Core Competencies Matrix

Computer Vision & Deep Learning	Hardware-accelerated image processing and transform. Camera and multiple view geometry for localization and mapping. RGB-D and Stereoscopic Systems. Hardware-accelerated video decoding and preprocessing for real time AI applications. Training of deep learning architectures for various downstream tasks: • image classification; • object detection, segmentation and tracking; • biometric retrieval, clustering and re-identification; • events detection and action recognition; • anomaly detection; • multimodal video analysis and semantic search; Libraries: • Training (Python): PyTorch, TensorFlow, Keras; • Inference (C++): OpenCV, Libtorch, Nvidia CV-CUDA, NVIDIA Video Codec SDK; • Model Optimization and Export: PyTorch JIT compiler, ONNX, TensorRT.
Specialized ML Research	Representation Learning: Supervised and unsupervised contrastive representation learning. Invariant/equivariant representation learning under spatial transformations. Low-Rank Adaptation and finetuning of CV foundation models for various downstream tasks. Multimodal Systems: multimodal encoders for semantic search; video RAG for video captioning and retrieval from the extracted knowledge base. Interpretability: Explainable AI (XAI).
Software Development & DevOps	Python, C++, bash scripting. Containerization: Docker, LXC Model Serving & LLM Runtimes: NVIDIA Triton Inference Server, Ray, vLLM, Ollama, llama.cpp Protocols, API Interfaces & Data Streaming : gRPC, REST API, Apache Kafka Target Architectures & Hardware: Edge (NVIDIA Jetson), FOG deployment
Data Strategy & Infrastructure	Data Analysis and Visualization: Scikit-learn, Pandas, Seaborn. DBMS & Fast Search: PostgreSQL, PGVector, Milvus. Dataset Management: On-premise manual and semi-automatic annotation through open source annotation frameworks. Data Lifecycle: Data Augmentation, Active Learning.

Experience

Reco 3.26 S.r.l

SENIOR COMPUTER VISION ENGINEER

Technical lead in the development of advanced machine vision solutions for public safety and industry.

Lecce, Italy

Dec. 2023 – Present

Inmatica S.p.A.

MACHINE LEARNING SPECIALIST

Development of products for the automatic analysis of sporting events from broadcast sources.

Applied research on AI and Sport Management 4.0.

Roma, Italy, Full Remote

May 2022 – Dec. 2023

Education & Research

Università del Salento

RESEARCH FELLOWSHIP: L'INTELLIGENZA ARTIFICIALE E LO SPORT MANAGEMENT 4.0

Applied research on AI and Sport Management. Funded by Inmatica Spa.

Lecce, Italy

May 2021 – Apr. 2022

Università del Salento

PHD IN THEORETICAL PHYSICS

Thesis: "Soliton configurations in elasticity theories of liquid crystals and their applications in optoelectronics".

Funded by MIUR.

Lecce, Italy

Dec. 2017 – Jul. 2021

Università del Salento

MASTER'S DEGREE IN THEORETICAL PHYSICS

Lecce, Italy

Dec. 2014 – Apr. 2017

Università del Salento

BACHELOR DEGREE IN PHYSICS

Lecce, Italy

Oct. 2011 – Dec. 2014

Università del Salento

STUDENT OF SCUOLA SUPERIORE ISUFI

Lecce, Italy

Oct. 2011 – Feb. 2018

University of Cordoba (UCO)

ERASMUS+ SEMESTER

Cordoba, Spain

Sep. 2015 – Feb. 2016

Postgraduate Specialization Schools

- **SFT 2019:** Lectures on Statistical Field Theories, Galileo Galilei Institute (Firenze).
- **ESC 2019:** 11th ed. of Efficient Scientific Computing (Bertinoro).

Publications & Presentations

Author of **11 peer-reviewed publications** and speaker at **8 international meetings and expos**.

Selected peer-reviewed publications:

- Skyrmion States in Chiral Liquid Crystals, Theoretical and Mathematical Physics (Russian Federation), 2018, 196(2), pp. 1150-1163.
- Helicoids in chiral liquid crystals under external fields, Physical Review E, 2019, 100(5), 052703.
- Skyrmion tubes in achiral nematic liquid crystals, Physical Review E 105, 024701

Selected talks and expos:

- People, Intelligence, Security and Smart Environments, October 5 2026, Bari, Italy (Talk).
- Social Football Summit 2022, Sept. 27-28 2022, Roma, Italy (Expo).
- 15th European Conference On Liquid Crystals, June 30 – July 5, 2019, Wrocław, Poland (Talk).

More details can be found at <https://www.scopus.com/authid/detail.uri?authorId=57200372400>.