Gianmarco Santoro

Data Scientist - AI | Mechanical Engineer - Automation

I'm currently focused on **AI** and seeking opportunities in **Deep Tech**:

Computer Vision, Robotics, Sys Integration, Multi-Modal AI, Edge AI, and more.

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SKILLS

Visit my Website for more
https://gianmarco-san.github.io/J

IT & Tools

· Python, R, GIT-GitHub/Lab, Jupyter/Colab, HTML, CSS, PyTorch, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn
· PLC Siemens (Climatix IC), MsOffice, GSuite, Excel, Word, Calendar, Notion, Canva
· Matlab & Simulink, AutoCAD, SolidWorks, CATIA, HyperMesh/Ext., MSC-Adams/Apex
· Basic: C, JS, Bash, SSH, TCP-IP, Modbus, qModMaster, mRemoteNG

Languages

· **Italian** | C2 - Mothertongue
· **English** | C1 - Professional
· **German** | A2 - Basic

Cultivating Startup ideas

· Project-Driven Work Community
· Food Social-Media

PROFILE

From **EU**, free to relocate

Areas of interest

AI, robotics, computer vision, automation, R&D, smart devices, aerospace, e-mobility, energy transition, materials (re)cycle, health, management, new ideas dev.

More about me

My interests range from science, tech, food, art, nature, to travel, games, music, wellness

My sports: mainly running, swimming, gym

I love to continuously improve products, details & my abilities, focusing on the big picture to keep efficiency high

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EXPERIENCE

DeepFake Detection Exploiting Self-Attention Maps | Computer Vision

MICC (UniFi) | Florence, Italy | Dec 2023 - Apr 2024

Implemented **Out-of-Distribution Detection** on *FF++* dataset achieving a mean **60% AUC-ROC on five forgery types**. A 2-step method:
· Extracted Self-Attention heatmaps via **ViT**, pre-trained on face recognition.
· Enhanced OOD detection via convolutional **autoencoder** trained on reals.

Smart Center | IT & System Integration

Daikin Applied Europe SpA | Rome, Italy | Jun 2021 - Sep 2022

Worked on cloud-based HVAC monitoring, system integration, and services:
· **Automated PLC** mapping and alarm selection using Python.
· Developed a sensor-to-cloud **temperature control system** for efficiency.
· **Services**, such as periodic reports via web API.

Wireless Charging System | Operations Research

Enermove Srl | Turin, Italy | Apr 2020 - Mar 2021

Designed a **predictive methodology** for planning infrastructure in a **wireless dynamic EV charging system** for industrial logistics:
· Developed and **optimized a mathematical model** using genetic algorithms to align logistics with energy and economic needs.

Chip Extrusion Recycling | Experimental Research

Institut für Umformtechnik und Leichtbau | Dortmund, Germany | Feb - Sep 2018

Aluminum recycling process experimentation by direct extrusion of the waste material (**Chip Extrusion**) applied to mixed waste materials (**DoE**):
· Analyzed **mechanical** (traction, hardness), **metallurgical** (microstructure, metallography), **chemical** and **aesthetic properties** of extruded profiles.
· Process simulated via **FEM** software, compared results with experiments.
· Assessed **industrial feasibility** and identified process bottlenecks.

EDUCATION

Data Science & Statistical Learning | II Level Master

UniFi & IMT for Advanced Studies | Feb 2023 - Apr 2024 | 110/110 cum laude

Some topics: **Optimization**, GIS, **DL**, **NLP**, Graph Theory. A few **projects**:
· ML pipeline: **Grid Search** on linear regression degree.
· Economics: Salary prediction on features like education via **CART** models.
· DL: CIFAR-10 images recognition via **CNNs** models (**CUDA**, **PyTorch**).
· Policy impact: **Causal inference** on relationship via diff-in-diff.

Mechanical Engineering

M.Sc. @ PoliTo & B.Sc. @ UniBo | Until Apr 2021 | 104/110

Specialized in **automation**. Some extra projects:
· Fully **designed** a two-stage **reduction gearbox** for general applications.
· **Thermal design** of hot air boiler and home **heating system**.
· Built **numerical model** for air-hot fumes metal flue **heat exchange**.
· Automation and **mechatronics** labs: PLC, PID controls, pneumatics.