Simone Sorrenti
Machine Learning Engineer

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SUMMARY

Passionate Machine Learning Engineer with an MS in Artificial Intelligence and hands-on experience in advanced ML applications. Currently, I lead projects in computer vision, including object detection, OCR, anomaly detection and dataset creation. My background in full-stack development and interdisciplinary projects enhances my problem-solving skills and ability to integrate ML innovations into practical solutions. Eager to leverage my expertise to tackle complex problems and drive innovation.

EXPERIENCE

R&D AI & Robotics Engineer, TXT E-Tech

📅 06/2024 - Present 📍 Milan, Italy

- Fine-tuned and implemented computer vision models for object detection and OCR, utilizing cameras to enable a robotic arm to autonomously perform validation tests on cockpit cabins. Additionally, developed and implemented an audio matching algorithm using MFCC features and DTW algorithms to enhance the system's validation capabilities.
- Developing Generative Adversarial Networks (GANs) and autoencoders to identify anomalies in solar panel cells mounted on satellites.
- Creating a dataset for object detection from aerial footage for an upcoming Kaggle competition.

IT Consultant, Blue Reply

📅 06/2020 - 08/2021 📍 Milan, Italy

- Developed interactive web applications using both frontend and backend technologies, while working closely with cross-functional teams to identify client needs and deliver tailored solutions in the insurance sector.

Application Development Analyst, Accenture

📅 01/2020 - 06/2020 📍 Milan, Italy

- Developed and maintained web applications for the banking sector, collaborating with cross-functional teams to gather and analyze user requirements.

EDUCATION

M.Sc. in Machine Learning
Polytechnic of Milan

📅 09/2020 - 04/2024 📍 Milan, Italy

- Thesis: PERIVALLON (European Project) - Detection of Illegal Landfills using Deep Learning: A Weakly Supervised Approach

GPA
3.74 / 4.0

B.Sc. in Informatics
University of Bari Aldo Moro

📅 09/2014 - 10/2018 📍 Bari, Italy

- Thesis: Solar radiation prediction through Machine Learning algorithms

GPA
3.79 / 4.0

ML PROJECTS

- **Detection of Illegal Landfills:** Collaborated on the EU-funded PERIVALLON project, focusing on illegal waste detection using satellite imagery. Employed CNNs, Vision Transformers, and weakly supervised segmentation techniques. [Thesis] [GitHub]
- **Contrastive Language-Image Pre-Training:** Explored CLIP models for image captioning, zero-shot classification, image retrieval and clustering tasks across diverse datasets, including medical and fashion data. [Report] [GitHub]
- **Question Answering System:** Implemented a question answering system with BERT, GPT-2, and T5 on the SQuAD dataset, focusing on answer extraction and response generation. [GitHub]
- **Autonomous Mapping and Navigation:** Created and visualized environmental maps using 2D and 3D laser data. Implemented waypoint-based navigation with autonomous movement and localization, utilizing Move Base and AMCL for effective pathfinding and obstacle avoidance. [GitHub]
- **Recommender System:** Developed a recommender system for TV shows utilizing Content-Based Filtering, Collaborative Filtering, Context-Aware, Graph-Based and Hybrid approaches. Focused on user interaction data and show features. [Kaggle]
- **Prediction of Solar Radiation Through Machine Learning Algorithms:** Developed a system for predicting solar radiation to optimize irrigation processes, utilizing machine learning algorithms such as Support Vector Machines (SVM), Multi-Layer Perceptron (MLP), and Long Short-Term Memory (LSTM) networks. Applied feature selection techniques to identify key meteorological parameters for accurate forecasting. [Thesis]

SKILLS

Technical Skills: Python, Java, VSCode, PyTorch, TensorFlow, CUDA, ROS2, Linux, OpenCV, HugginFace, Git, Jira, MySQL, TypeScript, PHP, HTML, CSS

Language Skills: English (B2), Italian (Native)

Soft Skills: Driven by continuous learning, experienced in cross-functional collaboration, adept at solving complex and ambiguous problems, and leveraging a scientific approach to problem-solving.