CRISTIAN C. SPAGNUOLO

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EXPERIENCE

ML cube ↗   09/2024 – Now
AI Engineer   *Milan, Italy*

- Implemented a **document digitalization pipeline** to process **scanned PDFs**, achieving **79% accuracy** in **OCR and entity extraction** to construct a **knowledge graph** for structured information retrieval.
- Designed and developed a normative assistant **AI chatbot** for a **leading financial institution**, leveraging a **knowledge graph** and **RAG** techniques to streamline navigation of regulatory information, resulting in a **18%** enhanced decision-making accuracy.
- Developed an **LLM-powered agent** for financial users, enabling natural language queries on MSSQL databases with a demonstrated **system accuracy of 76%**.
- Coordinated efforts with product and engineering teams to design and implement a new feature for **segmented monitoring** on the ML cube Platform. This enabled precise tracking of sub-population distribution shifts, driving a **12% increase** in subscriber growth.

EDUCATION

Politecnico di Milano   02/2020 – 07/2024
*Master's Degree in Computer Science and Engineering - **110/110 cum laude***   *Milan, Italy*

Università degli Studi del Sannio   09/2015 – 10/2019
*Bachelor's Degree in Computer Science and Engineering - **110/110 cum laude***   *Benevento, Italy*

PROJECTS

Image Distribution Drift Simulator ↗   10/2024 – 12/2024

- Designed and implemented an **image generator** to simulate **quantified distribution drift** in image datasets, enabling robust testing and validation of machine learning models.
  Technologies: Python, Polars, Torch, Plotly.

Teleport Markov Decision Process ↗   11/2022 – 07/2024

- Developed a novel curriculum learning approach based on teleportation mechanisms with a research team of 4 people, resulting in 5 times faster learning.
  Technologies: Python, NumPy, PyTorch, Open AI Gym, MLFlow.

For a complete list, please refer to my portfolio ↗.

TECHNICAL SKILLS

- **Programming languages:** python, sql, java, c, assembly.
- **AI/ML:** pandas, **pytorch**, polars, numpy, tensorflow, **langchain**, **langgraph**, crew ai, **huggingface**, llamaindex, olama, deepseek, open ai gym, **mlflow**, scikit-learn, matplotlib, **xgboost**, seaborn, plotly.
- **Technologies:** gpc, aws, azure, git, github, docker, mongodb, fastapi, firebase, django, node-red, make, uv, chroma, neo4j.

LANGUAGE SKILLS

- **English:** Fluent, Master's degree completed in English.
- **Italian:** Native.

ACHIEVEMENTS

2nd Place – Hackapizza Hackathon   01/2025

- Built a hybrid retrieval system integrating **semantic search** and **metadata filtering**, placed **2nd** out of 18 teams selected from **500+** applicants.