






# Antonino Pio Lupo

Data Science Graduate

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## PROFESSIONAL SUMMARY

Data Science graduate with a strong technical foundation in predictive modeling and sports analytics. Proficient in engineering end-to-end data pipelines using Python, R, and SQL. Experienced in designing machine learning algorithms for probabilistic event forecasting, validated through rigorous backtesting and Monte Carlo simulations. Leveraging Matplotlib, Seaborn, and Power BI to translate complex statistical analysis into actionable football insights.

## WORK EXPERIENCE

- Data Analyst Intern

04/2025 - 06/2025

Aesys S.r.l. (Remote)

  - Developed a sentiment analysis pipeline in Python to process 56,000+ tweets, utilizing NLP techniques to quantify and visualize the shift in communication tone before and after the presidency.
  - Optimized Azure cloud ETL pipelines, restructuring data flows to improve processing scalability and reduce latency for large-scale datasets.
  - Deployed interactive data visualization apps, transforming raw unstructured data into strategic insights, directly supporting executive decision-making.
- Financial Analyst Intern

10/2022 - 12/2022

Banca Mediolanum S.p.A. (Bologna, Italy)

  - Analyzed portfolio performance metrics to identify growth opportunities, directly supporting senior advisors in wealth management strategies.
  - Conducted market research and financial reporting, providing data-driven recommendations for client asset allocation.

## KEY PROJECTS

- Master Thesis: Machine Learning Model for Shot Dominance

  - Developed a predictive model to forecast shot dominance in football matches, identifying key performance indicators.
  - Engineered a robust data pipeline using R for web scraping and Python for cleaning, standardizing, and merging disparate data sources.
  - Designed predictive features to enhance interpretability and calibrated multiple ML algorithms to optimize performance.
- Machine Learning Predictor for Over/Under 2.5

  - Engineered a LightGBM Classifier utilizing 9-year historical data from Fbref.
  - Implemented rigorous backtesting protocols using Monte Carlo simulations to validate model stability against market volatility.
- Fbref Data Scraping Project

  - Engineered an automated R scraper using selenider and chromote to bypass Cloudflare, extracting statistical categories for 90+ teams.
  - Architected a robust, multi-hour scraping process with automated retry-on-failure mechanisms.
  - Implemented advanced data cleaning logic to normalize team names across leagues and consolidate dynamic columns.
- Reinforcement Learning Blackjack Agent

  - Developed a custom OpenAI Gym environment to train a Q-Learning agent using Linear Function Approximation.
  - Engineered state representations using binary encoding and polynomial features, achieving ~49% win rate over 1M episodes.
- Corner Kick Regression Model (Soccerment Lab)

  - Collaborated to develop a Random Forest Regressor predicting match corner counts using proprietary data from a leading football analytics startup.

## EDUCATION

- MA in Data Science for Economics

09/2023 - 10/2025

University of Milan, Italy

Grade: 106/110 | Focus: Machine Learning, NLP, Statistical Methods, Big Data Architecture and Security
- BA in Business and Economics

09/2020 - 09/2023

University of Bologna, Italy

Grade: 110L/110 (Summa Cum Laude)

Exchange Program: Dickinson College, PA, USA (01/2023 - 05/2023)

## TECHNICAL SKILLS & LANGUAGES

</> Technical Proficiency	🇺🇸 Languages						
<div>Core Stack:</div> <div><div>Python</div><div>R</div><div>SQL</div></div> <div>Data Engineering &amp; Cloud:</div> <div>Azure Cloud, ETL Processes, Web Scraping (Selenium), Git, Power BI</div> <div>Modeling &amp; Analytics:</div> <div>Machine Learning, Reinforcement Learning, Statistical Analysis</div>	<table><tr><td>Italian</td><td>Native</td></tr><tr><td>English</td><td>Fluent (IELTS 7.5/C1)</td></tr><tr><td>German</td><td>Conversational (B2)</td></tr></table>	Italian	Native	English	Fluent (IELTS 7.5/C1)	German	Conversational (B2)
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