Leo D'AMATO

Ph.D. Researcher | AI

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⦿ Pescara, Italy

I'm currently a Ph.D student at the ISTC-CNR, the Institute for Cognitive Sciences and Technologies of the Italian National Research Council. My scholarship belongs to the first cycle of the Italian National Ph.D Program in Artificial Intelligence and my research is mainly focused on cognitive science, representation learning and probabilistic generative models. Besides this, I'm interested in Natural Language Processing and High Performance Computing.

📖 PUBLICATIONS

2024　Pezzulo G, D'Amato L, Mannella F, Priorelli M, Van De Maele T, Stoianov IP, Friston K. **Neural representation in active inference : Using generative models to interact with—and understand—the lived world.** Annals of the New York Academy of Sciences. https://doi.org/10.1111/nyas.15118.

2024　D'Amato L, Naldini F, Tibaldo V, Trianni V, Pellegrini P. **Towards self-organizing railway traffic management : concept and framework.** Journal of Rail Transport Planning & Management. https://doi.org/10.1016/j.jrtpm.2023.100427.

🖥 PROJECTS

SIMPLEGRID   2022 - TODAY
⦿ github.com/damat-le/gym-simplegrid
SimpleGrid is a simple grid environment for Gymnasium. It is easy to use and customise and it is intended to offer an environment for quickly testing and prototyping different RL algorithms.

Gymnasium　Reinforcement Learning　Python

💼 PROFESSIONAL EXPERIENCE

| Feb 2022 - Today | **Lecturer** |
| Milano, Italy | Talent Garden Innovation School |

I give the lectures of the Statistics module of the Business Data Analysis Master organized by Talent Garden Innovation School.

Statistics　Gretl

| Apr 2021 - Oct 2021 | **Data Scientist** |
| Cagliari, Italy | Linkalab s.r.l. |

I was in charge of developing and applying natural language processing techniques to automatically monitor, in real time, the reputation of one of our customers on social networks.
> Social listening
> Data cleaning and analysis
> Sentiment and emotion analysis, text classification, clustering
> Anomaly detection and smart alerting in case of reputational crisis

Python　Pandas　Sprinklr　Hugging Face　AWS

Feb 2021 - Mar 2021
Pescara, Italy
	## Data Scientist
	Fater s.p.a.
	
	I was in charge of developing an algorithm to efficiently plan promotional activities of Fater's products. The project was particularly challenging because of the underlying complex promotion's dynamics, the huge amount of data involved and their heterogeneous nature.
	  › Retrieve data from multiple heterogeneous sources
	  › Process and organize very-low-quality data
	  › Design of custom algorithms to detect and evaluate past promotional activities
	`Python` `Pandas` `Matplotlib` `Statistics`

🎓 EDUCATION

Ph.D. 2021 - Today Rome, Italy	## Italian National Research Council (CNR) Artificial Intelligence *Italian National Ph.D. Program in Artificial Intelligence* My research is mainly focused on cognitive science, representation learning and deep generative models. I analyse the distortions induced by a biased dataset or a supplemental task on the representation learning process. These distortions have been observed in experiments from cognitive science on humans and also occur in generative models when capacity constraints are in force. Understanding them is critical for explaining the behavior of artificial agents that exploit the model of the environment they have learnt from experience for planning.
Master's degree 2018 - 2020 France	## Université Côte d'Azur and University of L'Aquila Mathematics (LM-40) *MathMods double master's degree program* Thesis Title : Mean Field Games on finite state space Supervisor : François Delarue Graduation Date : 2020-09-22 Final Degree Mark : 110/110 cum laude
Erasmus 2019 Germany	## Universität Hamburg Erasmus Traineeship *MathMods double master's degree program*
Bachelor's degree 2015 - 2018 Italy	## University of L'Aquila Mathematics (L-35) Thesis Title : Random Walk and Heat Equation Supervisor : Anna De Masi Graduation Date : 2018-07-21 Final Degree Mark : 110/110 cum laude

🎓 OTHER TRAINING COURSES

Jun 2023 Grosseto, Italy	## ACDL2023 : 6th Advanced Course on Data Science & Machine Learning https://acdl2023.icas.cc/ Full-immersion five-day Course on cutting-edge advances in Data Science and Deep Learning with lectures delivered by world-renowned experts.

| Oct 2020 - Gen 2021 | **Data Science & Artificial Intelligence Master** |
| Milan, Italy | Talent Garden Innovation School |

The master is organized in 3 main modules :
> ADVANCED MACHINE LEARNING & CLOUD COMPUTING : introduction to the main Python libraries (Pandas, Numpy etc.) for advanced manipulation and analysis of data through the main machine learning algorithms. The module also provides an introduction to Linux systems, the execution of remote query of large masses of data, the recovery of data from websites through web scraping techniques and an introduction to the concept of cloud computing using AWS.
> DEEP LEARNING & ADVANCED TOPICS : includes the study of network science and statistics, neural networks and natural language processing to extract complex information from texts, images and other unstructured data.
> FINAL PROJECT : the last two weeks are dedicated to the realization of a group project commissioned by Groupama Insurance. It is about fraud detection in car insurance using ML algorithms.

| Sep 2020 | **Trasferimento delle Tecnologie Matematiche per l'Innovazione** |
| Rome, Italy | Italian National Research Council (CNR) |

The aim of the course is to train the professional profile of the "Expert in Transfer of Mathematical Sciences and Technologies for Innovation" (in short : Technological Translator). Such a profile was created to facilitate communication and promote collaboration between companies and research centers.

🎓 Language Certifications

Gen 2020	**French Language** : Cours universitaire de langue française, Université Côte d'Azur
Aug 2019	**German Language** : German language and culture for foreigners (level A1), Universität Hamburg
Aug 2018	**English Language** : TOEFL PBT, Wayne State University (Detroit, Michigan, USA)