


Andrea Rafanelli

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EDUCATION

Ph.D in Artificial Intelligence for Society

Nov. 2021 – Present

Università degli Studi di Pisa

Pisa (PI), Italy

- Mitigated deep learning problems like data scarcity and lack of transparency by investigating Neuro-Symbolic AI techniques.
- I am part of **Artificial Agents and Artificial Intelligence Research Group** of the Department of Computer Science, Engineering, and Mathematics (DISIM) at University of l'Aquila, and of **Pervasive Intelligence Knowledge and Autonomy Group** of Department of Computer Science and Engineering (DISI) at University of Bologna.

M.Sc Data analytics for business and economics

Oct. 2018 – Sep. 2020

Università Cattolica Del Sacro Cuore

Milan (MI), Italy

- Applications of statistical, probabilistic, mathematical and computational methodologies that allow the construction of inferential and forecasting models with exploratory, confirmatory or in any case supporting decision-making purposes.
- **relevant coursework:** Neural network, Data mining, Stochastic modelling, Computational statistics, Statistical learning, Business analytics, Dynamic economics, Digital marketing.
- **Thesis:** *Dynamic pricing under competition in an e-commerce scenario: a demand learning and price optimization technique.*
- Grade: 110/110

B.Sc Economics and Statistics

Sep. 2015 – Sep. 2018

Università degli Studi di Torino

Turin (TO), Italy

- Applications of theoretical tools for understanding economic problems within institutions and enterprises. Development of the ability to collect and analyse data to respond to identified problems and formulate data-based solutions.
- **relevant coursework:** Probability, Statistics, Data mining, Econometrics, Micro and Macro economics, Sampling theory, Financial markets.
- **Thesis:** *Evaluation techniques and their use in Italy to measure the effect of labor policies: a Difference in Difference method.*
- Grade: 105/110

PROFESSIONAL EXPERIENCE

Data Scientist

Oct. 2020 – Oct. 2021

Kellify S.p.a

Genoa (GE), Italy

- Research and development of a ML tool to classify good **wine investments**
- NLP project for **sentiment** classification and **swear words** identification

RESEARCH INTERESTS

Symbolic and Sub-symbolic integration: combining statistical AI with human-like symbolic knowledge and reasoning.

Explainable Artificial Intelligence: build transparent, explainable, and trustworthy systems.

SCIENTIFIC ACTIVITY

Program Committee Membership for TransAI 2023

Sept. 2023

<https://www.transai.org/>

Laguna Hills, CA

Program Committee Membership for EXTRAAMAS 2023

May 2023

<https://extraamas.ehealth.hevs.ch/index.html>

London, UK

Publication Committee Membership for ISM 2023

Dec. 2022

<https://semanticcomputing.wixsite.com/ism2022>

Naples, IT

EXTRA-CURRICULAR

Covid CXR hackathon

Feb. – Mar. 2022

Bracco Imaging, Centro Diagnostico Italiano

- Design an algorithm to support medical doctor to formulate a Covid-19 prognosis from chest X-ray images and clinical data collected during triage.
<https://ai4covid-hackathon.it/>

Dynamic Pricing competition

Jun. – Aug. 2020

Haensel AMS

- Build an RL algorithm that is able to vary prices and compete with other algorithms by incorporating the information received on a simulated market.
<https://dynamic-pricing-competition.com/>

Hackathon Stats Under the Stars 5

Jun. 2019

Università Bocconi

- Analysis of a real-world analytics problem, provided by Generali Assicurazioni.
<https://www.sus5.unibocconi.eu/>

MOOCS

Neuro-Symbolic AI Essentials

Feb. 2023

https://www.credly.com/badges/ab083fa4-fd5c-4576-a03d-81fbf0c2084c/public_url

IBM

Advanced SQL for Query Tuning and Performance Optimization

Sept. 2020

LinkedIn

Reinforcement Learning in Python

Apr. 2020

<https://www.udemy.com/certificate/UC-44e972b7-b2c5-4954-9e66-d1345e94c106/>

Udemy

Tableau certification

Dec. 2019

<https://www.udemy.com/certificate/UC-NM8WUGUT/>

Udemy

Deep Learning A-Z: Hands-on Artificial Neural Network

Nov. 2019

<https://www.udemy.com/certificate/UC-QN4LRUTN/>

Udemy

TECHNICAL SKILLS

Languages : Python, Prolog

Data Analysis Tools : R, Python + Pandas, NumPy, Scikit-learn, Keras

Databases : SQL, MySQL

IDEs : PyCharm, RStudio

Markup languages : Markdown, LATEX

LANGUAGES

	Listening	Reading	Interaction	Speaking	Writing
Italian	Native language				
English	C1	C1	B2	B2	B2
French	B2	B2	B1	B1	B1

LIST OF PUBLICATIONS

- [ARM⁺on] Andrea Agiollo, Andrea Rafanelli, Matteo Magnini, Giovanni Ciatto, and Andrea Omicini. Symbolic knowledge injection meets intelligent agents: Qos metrics and experiments. In *Autonomous Agents and Multi-Agent Systems*. under publication.
- [ARO22] Andrea Agiollo, Andrea Rafanelli, and Andrea Omicini. Towards quality-of-service metrics for symbolic knowledge injection. In Angelo Ferrando and Viviana Mascardi, editors, *Proceedings of the 23rd Workshop "From Objects to Agents", Genova, Italy, September 1-3, 2022*, volume 3261 of *CEUR Workshop Proceedings*, pages 30–47. CEUR-WS.org, 2022.
- [DGCR⁺on] Giovanni De Gasperis, Stefania Costantini, Andrea Rafanelli, Patrizio Migliarini, Ivan Letteri, and Abeer Dyoub. Constraint-procedural logic-generated environments for deep q-learning agent training and benchmarking. In *Journal of Logic and Computation*. under publication.
- [RCDGon] Andrea Rafanelli, Stefania Costantini, and Giovanni De Gasperis. Neural-logic multi-agent system for flood event detection. In *Intelligenza Artificiale, 2023*, under publication.
- [RCG22] Andrea Rafanelli, Stefania Costantini, and Giovanni De Gasperis. A multi-agent-system framework for flooding events. In Angelo Ferrando and Viviana Mascardi, editors, *Proceedings of the 23rd Workshop "From Objects to Agents", Genova, Italy, September 1-3, 2022*, volume 3261 of *CEUR Workshop Proceedings*, pages 142–151. CEUR-WS.org, 2022.
- [RCOon] Andrea Rafanelli, Stefania Costantini, and Andrea Omicini. Position paper: On the role of abductive reasoning in semantic image segmentation. In *21st International Conference of the Italian Association for Artificial Intelligence (AIXIA 2022)*. under publication.

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.

05/06/2023

Andrea Rafanelli