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Daniele Leso

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Gender: Male | **Date of birth**: Jan 4 1999 | **Nationality**: Italy

PREFERRED JOB

Physicist

WORK EXPERIENCE

[02/2025 - present]

university research assistant

Università di Bologna , Luigi Candoni 78A - ROMA, RM (RM) Italy

Company sector: Quality and security

Business or sector: education, training, research and development

Main activities and responsibilities: INTECH4WATER is a project dedicated to the purification, recovery, and reuse of wastewater from municipal treatment facilities and industrial processes, following a Circular Economy approach.

This initiative focuses on the integration of innovative, safe, and sustainable technologies to eliminate key contaminants found in wastewater, such as nitrogen, phosphorus, emerging pollutants, microplastics, and human pathogenic bacteria.

Acquired skills and achieved objectives: My primary contribution to this project involves data analysis and the design of experiments for the wide range of technologies developed by the various research teams.

In particular, we aim to apply data science and machine learning techniques to enhance efficiency and minimize the costs associated with each experiment.

[09/2024 - 02/2025]

Research fellow

Agenzia Spaziale Italiana (ASI) , Via del Politecnico - ROME (RM) Italy

Business or sector: education, training, research and development

Main activities and responsibilities: In this experience, I successfully used likelihood-free inference techniques to study the y-type distorsion of the Cosmic Microwave Background using the Sunyaev-Zel'dovich effect as a mean to determine spectroscopic information about cluster of galaxies.

Acquired skills and achieved objectives: This experience allowed me to develop advanced Python programming skills, particularly in likelihood-free inference applied to astrophysical research. Additionally, collaborating closely with the ASI research team enhanced my soft skills and strengthened my ability to work both independently and within a team.

[02/2024 - 11/2024]

Expert of radioprotection

Policlinico Tor Vergata , Via del Politecnico - ROME (RM) Italy

Company sector: Quality and security

Business or sector: healthcare

Main activities and responsibilities: The internship activity related to the 2nd level master's degree at the University of Tor Vergata, called 'Physical Agents and Radipprotection', I was involved in a series of activities aimed at training an expert of Radioprotection in all 4 degrees recognized in Italy (I, II, III clinical and III). The 3rd degree internship activities were carried out in the Latina nuclear power plant.

[03/2021 - 10/2021]

Research assistant

La Sapienza di Roma - ROMA (RM) Italy

Business or sector: education, training, research and development

Main activities and responsibilities: I worked at the quantum information laboratory under the supervision of Prof. Fabio Sciarrino for about 6 months. I mainly concerned about investigating the optical properties of a three-armed optical chip.

Acquired skills and achieved objectives: In this experience I successfully

-built up the experimental setup needed for studying the optical chip's response function;

- developed a code in Python and analysed the data obtained from the experiment;

-modelized the problem and tested it by means of least square method;

-reported the obtained results in a paper.

EDUCATION AND TRAINING

[2023 - 2025] **Space Missions Science, Design and Applications**

Alma Mater Studiorum - Università di Bologna

Town: BOLOGNA

EQF level: 8

NQF level: 2nd level Academic Master's programme

Dissertation/thesis title: Exploring likelihood-free inference for the Sunyaev-Zeldovich effect

[2023 - 2024] **Physical agents and radioprotection**

Università degli Studi di ROMA 'Tor Vergata'

Town: ROMA

Final degree mark: 110/110 cum laude

EQF level: 8

NQF level: 2nd level Academic Master's programme

Dissertation/thesis title: Historical evolution of the neutron fluence-to-dose conversion coefficients in radioprotection

[2020 - 2023] **Physics**

Sapienza Università di Roma

Town: ROMA

2nd level degree in Physics

Final degree mark: 108/110

EQF level: 7

NQF level: 2nd cycle degree/Master of Science (2 years)

Dissertation/thesis title: On cosmological solutions of non-supersymmetric string models

Principal subjects/occupational skills covered:

Physics, Theoretical Physics, Mathematical Physics and research in Physics and technology especially concerning the main area of research of modern Physics such as condensed matter, particle and high energy, statistical and fundamental Physics.

Languages: Italian (native speaker), English (fluent, level C1).

Programming languages: C++, Python, Latex, Mathematica.

Note: The degree was obtained in 2022 but due to the Covid-19 emergency, the ceremony was delayed a few months.

[2017 - 2020] **Physics**

Università degli Studi 'Roma Tre'

Town: ROMA

1st level degree in Physics

Final degree mark: 109/110

EQF level: 6

NQF level: 1st cycle degree/Bachelor (3 years)

Dissertation/thesis title: Teoria spettrale e simmetrie quantistiche

OTHER POSTGRADUATE STUDIES

[2023] **Wolfram language course**

Wolfram Research

Description:

June 2023: Wolfram language course on 'Introduction to Machine Learning'.
September 2023: Wolfram language course on 'Advancing Calculus Research'.
October 2023: Wolfram language course on 'Processing Images from the Webb Space Telescope'.
December 2023: Wolfram language course on 'Statistics and Machine learning: better together'.
February 2024: Wolfram language course on 'Building a Data Science Pipeline'.
March 2024: Wolfram language course on 'Advancing Bioscience Research and Teaching with Wolfram Language'.
March 2024: Wolfram language course on 'Introduction to neural networks'.
March 2024: Wolfram language course on 'Analyzing real-world networks'.
April 2024: Wolfram language course on 'High-impact data visualization'.

PRE-UNIVERSITY STUDIES

[2017] **Secondary school diploma**: Vocational School, Technological sector, Electronic and electrical engineering specialisation, Automation focus
Italian secondary school diploma

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s)

English
LISTENING: C1 **READING:** C1 **WRITING:** C1
SPOKEN INTERACTION: C1 **SPOKEN PRODUCTION:** C1

French
LISTENING: A1 **READING:** A1 **WRITING:** A1
SPOKEN INTERACTION: A1 **SPOKEN PRODUCTION:** A1

Diploma(s) or certificate(s)
English: Diploma d'inglese come lingua straniera (livello C1.2) - British istitutes, 22 04 2020 - European level: C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference for Languages

OTHER SKILLS

Communication skills
I can work either in group or in full autonomy. I actually like, and prefer, working in a highly multi-cultural enviroments since I think the interaction with many different opinions and ideas stimulates creativity. Additionally, from a strictly professional point of view, my mathematical skills, developed from my highly theoretical background, merge harmoniously with more experimentally oriented professionists and, therefore, sharing opinions with them becomes imperative.
Organisational / managerial skills
I am able to manage small teams from 5 to 10 people. I can easily develop highly specific strategies with respect to the project and the individual team's skills.
Job-related skills
My studies covered all the main areas of theoretical Physics which grants me highly varied skills and a wide range of adaptability and flexibility. Additionally I integrated my theoretical proficencies with laboratory experiences. In particualr I studied the properties of optical chip for the Quantum Information laboratory of La Sapienza university. Moreover, my experience with non-supersymmetric models and String Theory helped me to develop the dedication and patience required for long term projects and researches.

DIGITAL COMPETENCES

SELF-ASSESSMENT				
INFORMATION AND DATA LITERACY	COMMUNICATION AND COLLABORATION	DIGITAL CONTENT CREATION	SAFETY	PROBLEM SOLVING
-	-	-	-	-

Digital competences - Self-assessment grid

Basic course on coding:

Roma tre, 2017

Data analisys in Physics:

Roma tre, 2018

Statistics and machince learning: better together:

Wolfram U, 2023-12-05

Building a Data Science Pipeline:

Wolfram U, 2024-02-29

Analyzing real-world networks in wolfram language:

Wolfram U, 2024-03-22

Basic digital competence:

APPLICATION SOFTWARE
LaTeX (Highly Specialised) | **Numerical analysis:** Mathematica (Intermediate) , MATLAB (Foundation)

COMPUTER PROGRAMMING

Programming languages: c (Intermediate) , C++ (Intermediate) , Python (Advanced)

DRIVING LICENCE

Driving licence category B / Car available

PUBLICATIONS

Journal articles

"Exploring the NANOG-TET2 Interaction Interface. Effects of a selected mutation and hypothesis on the clinical correlation with anemias" ; Claudia Testi, Roberta Piacentini, Alessandro Perrone, Chiara Bartoli, Daniele Leso, Domitilla Pavia, Elisa Pistolesi, Flavio Scipione, Irene Cotronea, Marco Adinolfi Falcone, Marco Ierani, Alberto Boffi, Lorenzo Di Rienzo ; Frontiers (2025)