

Simone Raciti

📍 Via de' Perfetti Ricasoli 21, Firenze(IT) – Born in Catania(IT) on 22/10/1996

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Education

Alma Mater Studiorum - University of Bologna (UNIBO)

Philosophy doctor in Atmospheric Physics

Bologna (Italy)

November 2025 - Present

Main topics:

- Radiative Transfer modeling
- Data assimilation algorithms
- Deep Learning modeling

Alma Mater Studiorum - University of Bologna (UNIBO)

Master of science degree in Earth System Physics

Bologna (Italy)

September 2023 - July 2025

With thesis:

"Data-driven emulation of atmospheric radiative transfer model".

Final Grade = 110/110.

Main topics:

- Fluidodynamics applied to meteorology
- Bayesian inference: Data assimilation and Inversion data technique
- Statistical data analysis for meteorology and air quality
- Modeling in Radiative transfer
- Meteorology models simulations: WRF.
- Planetary boundary layer CFD simulations: RANS and LES.

University of Florence (UNIFI)

Bachelor of Science degree in Physics and Astrophysics

Florence (Italy)

September 2016 - April 2022

With thesis in computational complex system physics:

"Analytical approach to phase transitions of PCA through mean field approximations"

Final Grade = 96/110.

Main topics:

- Classical and Quantum Physics
- Calculus and linear algebra
- Experimental methods

Leonardo da Vinci (IPSIA)

High school diploma in: Manufacturing Production for Industry

Florence (Italy)

A.S. 2015-2016

Via del Terzolle, 91, 50127 Firenze FI

Research Experience

CNR-IBE, National Council of Research Institute of Bio-economy

Internship

Sesto fiorentino (Italy)

March 2025 - June 2025

The internship represents a collaboration between CNR - IBE and Alma Mater Studiorum built on my master thesis. The main task represents the development of a deep learning model in order to emulate fast-forward radiative transfer model, for data assimilation purposes.

Key Words:

- Radiative transfer model (RTM)

- PyTorch
- LSTM
- Attention technique
- Variational Autoencoder

Work Experience

S3K Spa

Data scientist - Part time

Sesto fiorentino(Italy)

July 2024 - January 2025

I have been involved in a RnD project, made up of two parts: NLP, Computer Vision. First one was developed by me at all; I had to handle vectorization problem of a corpus of image captions, due to classical Bag of Words way to vectorizer objects. In order to solve this issue, i applied a fuzzy logic to previous algorithm: this was developed in first by two machine learning scientists Mao and Zhao, in 2017. My work lead us to implement them algorithm to a sentences corpus. It was performed using "Jaccard Similarity" instead of classical "Cosine Similarity". In that way semantic similarity between sentences was maintained.

Key Words:

- Natural Language Processing (NLP)
- Python
- Fuzzy Bag of words
- Jaccard distance

S3K Spa

Big Data Engineer - Part time

Sesto fiorentino(Italy)

January 2024 - June 2024

As consultant i worked into a big project of my customer: Guccio Gucci Spa. Project was oriented to management data pipeline of vocal data, stored into a AWS S3 bucket, in order to transcribe them and apply machine learning logic for sentiment analysis, classification speaker and topic recognition of discussion. Operatively: i developed data pipeline using Airflow dag into a 3-level based architecture(on a cleaning and step progress criteria). Into pipeline a lot of operation were implemented by me: from manage aws transcription to train Random forest to speaker classification and apply google neural network for topic recognitioning.

Key Words:

- Natural Language Processing (NLP)
- Python
- Random Forest
- Airflow
- Polars
- AWS

S3K Spa

Data Engineer - Full time

Sesto fiorentino(Italy)

September 2022 - December 2023

Unique Customer: Guccio Gucci Spa.

Development, Testing and Optimization of Stored Procedure in Redshift Databases to offer Business Intelligence services . Working with ETL technology for data integration, improving data preparation performance and reporting -Creation of Knime job in order to preprocess data, improve stored procedures performance and send reports -Using Talend i automatized and scheduled data pipeline.

Key Words:

- PL/SQL

- ETL - Knime and Talend
- AWS Redshift
- Databases
- Agile tools

CRIF Spa

Software developer - Full time

Bologna(Italy)

May 2022 - August 2022

I supported my team with a small tasks of maintenance of software sold to customer. Main task regarding API to access data sources and get information from these.

- API
- Java
- Git
- SpringBoot

Intec s.r.l

High school internship

Firenze(Italy)

Apr. 2016-May. 2016

- Maintenance of facilities for private companies: cleaning of industrial air ducts, repair of electrical devices in hospitals, and management of heating system issues in primary schools.

Tecnostampi s.r.l

High school internship

Calenzano(Italy)

Oct. 2015-Nov. 2015

- Industrial production in a factory of polymer materials for commercial use: operation of machine tools such as lathes and milling machines.

Technical skills

- Good knowledge of BASH language to coordinate terminal operations for many applications (e.g Big data engineer experience for dockering project / e.g performe analysis operation of output data CFD simulation)
- Great knowledge of PYTHON for Data analysis and development of Machine learning algorithm.(e.g Meteorological Data analysis performed into Master degree/ e.g Data scientist work experience)
- Great Knowledge of MATLAB for Numerical analysis and develop a very large stack of models(e.g Forward Schwarzschild model for Radiative Transfer in Atmosphere/ Implementation of inversion techniques and them optimization)
- Good Knowledge of JULIA language. Even though a lot of people keeping language as python (maybe employing cython to improve computational velocity), i think that it can be an actual valid alternative.
- Great Knowledge of PL/SQL language to work with databases and development of stored procedure to offer Business intelligence services(e.g Data engineer Experience)
- Basic Knowledge of R language for Statistical modeling and/or data analysis
- "The world lays on EXCEL"
- Great Knowledge of LATEX markup language in order to write documents.
- Windows and Linux as O.S.

Languages

	Skill	Level
• Italian	Speaking	C2 (Native)
	Reading	C2 (Native)
	Writing	C2 (Native)
	Skill	Level
• English	Speaking	B2 (Upper Intermediate)
	Reading	B2 (Upper Intermediate)
	Writing	B2 (Upper Intermediate)
	Skill	Level
• Spanish	Speaking	A2 (Beginner)
	Reading	A2 (Beginner)
	Writing	A2 (Beginner)

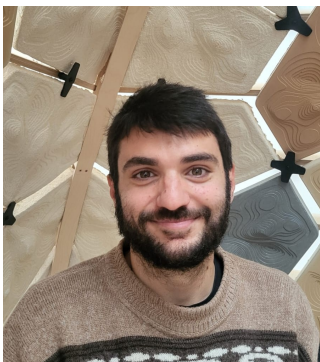
Soft skills

- Teamwork. In the last 3 years i collaborated with a lot of people for many different kinds of project: from corporate projects on customer needs to university project with other students and external research group.
- Keep learning. I need to keep my mind fresh and young with a continous learning and fancy challenges.
- Information gathering. In my opinion, it's the most beautiful feature that academia has given me.

Certifications

- Basic Proficiency in KNIME Analytics platflorm
- Advanced Proficiency in KNIME Analytics platform
- Basic Meterologist certified.

Interests



I have a lot of hobbies and interests. On technical/scientific side i'm interested in physics simulations, modeling and machine learning. On human side i love sport climbing and bouldering, trekking, cyclism and sometimes bakery also.

Autorizzo il trattamento dei miei dati personali presenti nel curriculum vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 e del GDPR (Regolamento UE 2016/679).