



Paolo Francesco Duminuco

Climate and Weather data analyst

My Contact



Hard Skills

- Climate models
- Agent-based models
- Object-oriented analysis
- Remote sensing for atmospheric science
- Infrared data interpretation
- Contingency tables
- Bootstrap and Interpolation
- Machine learning for data classification (e.g. random forest, k-means, agglomerative hierarchical clustering)
- Python
- High-Performance Computing
- Linux
- Rstudio
- Netlogo
- QGIS
- Microsoft 365

Soft Skills

- Decision making
- Communication
- Fast-learning
- Time managing
- Critical thinking
- Problem solving

Languages

- Italian
Native
- English
Fluent
- Spanish
Intermediate

Professional Experience

• **Researcher** | CMCC foundation

April 2024 - Present

Key responsibilities:

- Validated numerical weather prediction models using satellite data.
- Developed and applied statistical techniques and machine learning algorithms to analyze data from Meteosat Second/Third Generations and ERA5 datasets.
- Computing environmental and climate indexes for various scenarios, supporting decision-making processes.
- Conducted advanced data analysis using High-Performance Computing (HPC) system and GPU acceleration.
- Programmed solutions and workflows using Python and Linux.
- Academic paper writing.

• **Climate Risk Analyst Intern** | ABN AMRO Bank N.V.

March 2023 - August 2023

Key responsibilities:

- Analyzed financial and climate risk data to identify trends and inform decision-making.
- Developed innovative methodologies to detect and assess potential threats.
- Created detailed reports and effectively communicated insights to stakeholders.
- Delivered presentations and organized workshops to share findings and promote collaboration.
- Supported cross-functional teams by leveraging QGIS for geospatial analysis.

Educational Background

• **International Autumn School on Satellite Data Applications - 2024** | Hellenic National Meteorological Service and EUMETSAT

October 2024

Topics: Basics of remote sensing with satellites, Data access handling and visualization, Land applications, Atmospheric composition, Precipitation and moisture, MTG-1 Lightning Imager.

• **Master Degree in Climate Studies** | Wageningen University and Research

September 2021 - October 2023

EQF Level 7

Number of credits (ECTS) 120

Field of study: Environmental systems analysis, Programming in Python, Principle of Earth and Ecosystem Science, Soil-Vegetation-Atmosphere interactions, Agent-Based Modelling of Complex Adaptive Systems.

Thesis: Private urban greening: an agent-based model to assess the private adoption and performances of green roofs under social interactions and climate scenarios. Grade: 9/10.

• **MOOC course in Basics of Remote Sensing** | EO College

June 2023 - July 2023

Field of study: Electromagnetic waves, Atmosphere scattering mechanisms, Image classification, Random forest algorithm, Confusion matrices.

• **Single learning activities** | Alma Mater Studiorum - University of Bologna

September 2020 - July 2021

Number of credits (CFU) 30

Field of study: Physics, Organic chemistry, Ecology, Geology.

Other Activities

- Scoutism - Piazza Armerina (Italy)
2006 - 2018

- Bachelor Degree in Development and International Cooperation** | Alma Mater Studiorum - University of Bologna

September 2017 - November 2020

EQF Level 6

Number of credits (CFU) 180 | Grade 106/110

Field of study: Statistics, Environmental Economics, History, Geography, Demography.

Thesis: Into a sustainable future: a model to analyse the relation between reduction in mobility and urban pollution

Academic contributions

Poster: **Development of a Catalogue of Extreme Daily Precipitation for Emilia-Romagna and Analysis of Clusters Shifts under RCP8.5 using K-means**, Workshop on 'Machine Learning Applications in Climate and Ocean Science'.

February 2025 - Pune, India

Poster: **Evaluating Numerical Weather Prediction Model for Convective Clouds: A Case Study of the September 2022 Flood in Central Italy**, European Nowcasting and Weather Forecasting Conference (ENWFC).

November 2024 - Oslo, Norway

Oral presentation: **Effects of Covid19-restrictions on urban pollution: an analysis on European cities and different mobility habits**, Italian Association of Environmental and Resources Economist (IAERE) - Ninth annual conference.

April 2021 - Online