Pietro Colombo

Address: 188 Copland Road, Glasgow, UK| Mobile: +39 3460433904 | Email: pietro.colombo.statistica@gmail.com

PROFESSIONAL SUMMARY

I AM A STATISTICIAN AND RESEARCHER SPECIALIZING IN MACHINE LEARNING, DATA FUSION, FORECASTING (WITH APPLICATIONS IN ENERGY, ENVIRONMENT, AND ECONOMICS), AND APPROXIMATION METHODS FOR LARGE SPATIO-TEMPORAL DATASETS. I COLLABORATE WITH UNIVERSITIES IN THE UK, SWITZERLAND, AND ITALY, CONTRIBUTING TO INTERDISCIPLINARY RESEARCH PROJECTS.

MY EXPERIENCE SPANS BOTH THE PUBLIC AND PRIVATE SECTORS, INCLUDING MULTIPLE SHORT-TERM CONSULTANCY ROLES THAT HAVE ENHANCED MY APPLIED RESEARCH CAPABILITIES AND ANALYTICAL SKILLS. I ALSO HAVE EXPERIENCE IN STUDENT SUPERVISION AND CONTRIBUTE TO ACADEMIC TEACHING AS A PART-TIME LECTURER.

EDUCATION

ETH- Zurich — **Zurich, Switzerland**

- *Visiting Research* – Approximation methods for large dataset — 2024 - present
- Supervisor: Prof. Fabio Sigrist

University of Glasgow — **Glasgow, UK**

- *Ph.D. in Statistics* – Data Fusion algorithm for environmental variables — 2020-present
  - Supervisor: Prof. Claire Miller
  - Advanced statistical modeling, data integration, uncertainty quantification, and forecasting applied to climate research.

University of Bologna — **Bologna, Italy**

- *Master of Research in Statistics*, — 2018 - 2020
  - Master Thesis: Developed and implemented statistical models for data integration and fusion

University of Bergamo — **Bergamo, Italy**

- *BSc in Economics* — 2014 - 2017

PROFESSIONAL EXPERIENCE

University of Milano Bicocca — **Milan, Italy**

- *Researcher by appointments (Various appointments).* — 2025 – present
  - Developed an automated forecasting platform for economic time series, featuring an interactive R Shiny dashboard. The tool enables users to upload and explore data of any type, apply transformations (e.g., differencing), visualize data through various graphical outputs, and automatically select optimal forecasting models. It also supports manual input adjustments for custom scenario assessments and model fine-tuning.
  - Built a spatio-temporal database for environmental monitoring, with a focus on automated data acquisition via APIs from international sources such as Eurostat GISCO, ISTAT, Copernicus (ERA-5), LUCAS, EDGAR (JRC), and the European Environment Agency (EEA). Performed spatio-temporal harmonization and applied block kriging to establish a common spatio-temporal support across datasets. Managed the documentation and the reporting phase with a dedicated GitHub repository.
  - *https://www.paolomaranzano.net/scarface*

University of Glasgow — **Glasgow, UK**

- *Lecturer in Statistics,* — 2022 – present
  - Designed and delivered 6 university courses focusing on statistical programming (R & Python) Forecasting Models, and machine learning algorithms.
  - Supervised research projects. Served as Marker and Examiner.

Suerc Radio-Carbon Lab — **Glasgow, UK**

- *Statistical Technician* — 2023
  - Conducted data cleaning, synthesis, and analysis to support academic and industrial research.
  - Developed statistical data collection automation (*https://www.gla.ac.uk/research/az/suerc/*).

Agnes — **Ravenna, Italy**

- *Statistical Consultant,* — 2021
  - Developed customized statistical models for Agnes, an energy company, to support strategic decision-making and forecasting efforts (agnespower.com). Designed and implemented a method for enhancing data quality by downscaling wind-speed data, leading to improved representation and more accurate wind resource

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assessments for a wind farm site. Acted as a consultant on key performance metrics, evaluating and comparing outputs from various predictive models.

University Vanvitelli **Napoli, Italy**

- *Researcher by appointment,* 2025
    - Analysis of the electricity efficiency with particular reference to conversion to renewable energy sources, both at regional and sector level. Automatic data download, development of an algorithm for the electricity demand forecasting, development of an algorithm for the downscaling of national data to municipal sources.

SKILLS

- **Languages:** Italian (Mother Tongue); English (Fluent); French (Basic)
- **Programming Launguages:** Python, R ,Matlab, LATEX, Excel, GitHub, Cloud Computing.
- **Data Science & Analytics:** Advanced statistical modeling, time-series forecasting with applied experience in economics, social sciences, environment and energy.
- **Version Control & Collaboration:** GitHub (*https://github.com/Pietrostat193*)
- **Automation:** Created various script for automatic data download, model selection and forecast

.

MAJOR SCIENTIFIC PROJECTS

- **Hurricane Forecasting**: Studied the yearly forecast of Atlantic hurricanes counts using probabilistic, machine learning and statistical methods.
- **Data Fusion of Skew Data**: Developed an algorithm for Data Fusion of environmental skew data.
- **Data Fusion of Large Data**: Developed an algorithm for Data Fusion of large environmental dataset.
- **Earth Magnetic Field**: Developed a framework for modelling magnetic field of Earth using distributed satellites system.
- **Robust Pollution Modelling**: Developed an algorithm that produce accurate predictions even in presence of anomalous observations, with applications to air quality data.
- **Interpolation Uncertainty**: Developed a framework for study the interpolation uncertainty with application to Radiosonde data.
- **Other minor research projects**.

ADDITIONAL INFORMATION

- **Competitive sports:** Boxing (Regional Heavyweight final 2021)
- **Interests:** Boxing, Football, Politics, Meditation, Cold Plunge