Giorgio **Carbone**

Born in Como on May 13, 1997
Driver's license: B, with own car

 (+39) 3406959794 | ✉ carbone.giorgio4@gmail.com
 github/giocoal | linkedin/giorgiocarbone | Portfolio | Google Scholar

Education

University of Milano-Bicocca	Milan (MI), Italy
MASTER'S DEGREE IN DATA SCIENCE (LM91)	Sept. 2021 – March 2024

- Graduation grade: 110/110 cum laude
- Partly delivered in English
- Courses: Data Science Lab in Biosciences, Foundations of Probability and Statistics, Statistical Modeling, Machine learning and Decision Models, Foundations of Deep Learning, Digital Signal and Image Management, Foundations of Computer Science, Data Management and Visualization, Data Semantics, Text Mining and Search, Data Science Lab, Streaming Data Management and Time Series Analysis, Juridical and Social Issues in Information Society
- GPA: 29.7/30

University of Milano-Bicocca	Milan (MI), Italy
BACHELOR'S DEGREE OF CHEMICAL SCIENCES AND TECHNOLOGIES (L-27)	Sept. 2016 – Oct. 2020

- Graduation grade: 110/110 cum laude
- Relevant Courses: Physical Chemistry I, Physical Chemistry II and Laboratory, Physical Chemistry III and Laboratory, Organic Chemistry I, Organic Chemistry II and Laboratory, Organic Chemistry III and Laboratory, Biochemistry
- Certification: *Chemistry Eurobachelor®*

Istituto Superiore G. Terragni	Olgiate Comasco (CO), Italy
SCIENTIFIC HIGH SCHOOL WITH APPLIED SCIENCE OPTION	Sept. 2011 – July 2016

- Final grade: 91/100

Skills

Programming	Python (Pandas, NumPy, SciPy), R (tidyverse, forecast), SQL (MySQL), Bash, HTML
Deep Learning	scikit-learn, PyTorch, TensorFlow (Keras), OpenCV, Pillow
Data Visualization	Tableau, Python (matplotlib, seaborn, Plotly), R (ggplot2)
Operating System	Windows, Linux (Ubuntu, Bash)
Tools	Git, Jupyter Notebooks, Microsoft Office Suite, LaTeX, Markdown, Knime, Tableau, MongoDB, Neo4j
Languages	Italian (native), English (full professional proficiency – C1 listening, reading | B2 writing, speaking)
Certifications	Bbetween Languages – English C1, Chemistry Eurobachelor®, AICA e4job – Digital culture for work

Experience

University of Milano-Bicocca - Imaging and Vision Laboratory (IVL)	Milan (MI), Italy
Research Internship - Imaging and Vision Laboratory (IVL) - Full time - GitHub	Feb. 2023 – July 2023

Python, PyTorch, Deep Learning, Transformers, Transfer Learning, Neural Encoding Models, Visual Neuroscience

- During my research traineeship I worked on my master's thesis project under the supervision of Professor Simone Bianco.
- I developed an encoding model of the human visual cortex that enables accurate prediction of local neural BOLD fMRI responses to visual stimuli consisting of complex natural scenes, adopting a two-stage voxel-wise modelling approach based on stimuli visual features extraction (using goal-driven Deep Neural Networks) and their linear mapping to brain responses.
- The obtained model achieves high prediction performance, and it is made up of independent components that deal with the prediction of responses in the different regions of interest (ROIs), thereby describing how information is represented in the activity of different areas of the visual brain.

University of Milano-Bicocca – Computational Physical Chemistry Laboratory   Milan (MI), Italy

Research Internship - Computational Physical Chemistry Laboratory - Full time - ⬛ GitHub   Oct. 2019 – Jan. 2020

Python, Grand Canonical Monte Carlo Simulations, Machine Learning, Clustering, scikit-learn

- My internship activity was part of a research project concerning the molecular-level understanding, by means of computational Monte Carlo simulations, of the adsorption process of water on model surfaces of atmospheric particulate matter.
- I worked on my bachelor thesis project under the supervision of Professor Claudio Greco and Professor Ugo Cosentino, developing a solution capable of performing automatic frame-by-frame data analysis of the configurations (atomic coordinates of the water molecules) generated during each simulation (conducted at a specific H_2O pressure), leveraging unsupervised machine learning (DBSCAN) for water clusters detection, revealing how the structure of the adsorbed water molecules changes depending on water pressure, and how their orientation varies with the distance from the surface.

Publications

Rizza F, Rovaletti A, **Carbone G**, Miyake T, Greco C, Cosentino U. *Theoretical Investigation of Inorganic Particulate Matter: The Case of Water Adsorption on a NaCl Particle Model Studied Using Grand Canonical Monte Carlo Simulations*. Inorganics. 2023; 11(11):421. https://doi.org/10.3390/inorganics11110421

- I participated in the research project during a research internship in 2020 and during a voluntary collaboration throughout 2023.
- My work focused on the investigation, formal analysis (cluster analysis and orientational analysis) and data curation phases, specifically studying the aggregative phenomena that characterize the process of water adsorption on NaCl atmospheric particulate matter.

«I authorize the processing of my personal data in the curriculum vitae in accordance with Legislative Decree No. 196 of June 30, 2003, "Codice in materia di protezione dei dati personali" and the GDPR (EU Regulation 2016/679). »

Montano Lucino (CO), 25/03/2024

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