

# Maria Sofia Bucarelli

## Personal Details

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[mariasofiabucarelli@gmail.com](mailto:mariasofiabucarelli@gmail.com)

## Research Interests

Theory and applications of Machine Learning, Foundations of Machine Learning

## Education

2020–present **PhD student in Data Science**, *Sapienza University of Rome*,  
Advisor: Prof. Fabrizio Silvestri, Planned Graduation: January 2024

2023–present **Visiting Period**, *University of Cambridge – Cambridge, UK*, Professor Pietro Liò

2016–2019 **Master's Degree in Mathematics**, *Sapienza University of Rome*,  
Major: Statistical mechanics,  
Dissertation: "Generalizations of the "relativistic" Hopfield model"  
Final Mark: 110/110 cum laude.

2016 **Exchange program, Erasmus**, *Sorbonne Université – Paris, France*

2013–2016 **Bachelor's Degree in Mathematics**, *Sapienza University of Rome*,  
Major: Analysis,  
Dissertation: "Elliptic partial differential equations"  
Final Mark: 108/110

## Scientific Publications

- F. Siciliano, M. S. Bucarelli, G. Tolomei and F. Silvestri, "NEWRON: A New Generalization of the Artificial Neuron to Enhance the Interpretability of Neural Networks," 2022 International Joint Conference on Neural Networks (IJCNN), 2022, pp. 01-17, doi: 10.1109/IJCNN55064.2022.9892367.
- M. S. Bucarelli, L. Cassano, F. Siciliano, A. Mantrach and F. Silvestri, "Leveraging Inter-rater Agreement for Classification in the Presence of Noisy Labels" 2023 (CVPR), 2023.

## Experience

05-11 2022 **Applied Scientist Intern**, *Amazon Dev Center Italy SRL*, TEN search team

10-12 2021 **Teaching assistant**, *Sapienza University of Rome*,

2019–2020 **Internship in the Computer Science Department**, *Bank of Italy – Frascati, Italy*  
◦ Introduction to Machine Learning and NLP techniques.

## Language and Digital Skills

Programming Languages Python (intermediate), Matlab (B), C++ (beginner)

Frameworks PyTorch

Utilities Jupyter Notebook, Anaconda, Git

Others  $\text{\LaTeX}$

Communication English (B2), French (B1), Italian (native speaker)