

# Samuele Marro

## Student Researcher

Bologna, Italy  
(+39) 342 329-5042  
✉ [samuele.marro@unibo.it](mailto:samuele.marro@unibo.it)  
[samuelemarro.it](https://samuelemarro.it)  
🌐 [samuelemarro](https://samuelemarro)



### Education

- Sep '22 – Today **MSc in Artificial Intelligence, University of Bologna.**
- Current GPA: **29.70/30**, top of the class (170 students).
- Oct '19 – Today **Excellency Degree, Institute of Superior Studies, Bologna.**
- 7 STEM students are admitted each year and are provided with a personal tutor, exemption from tuition fees, free accommodation and an annual scholarship throughout their Bachelor's and Master's degrees.
  - Yearly requirements: 28/30 GPA, no grade lower than 24/30, must take 5 additional excellency courses.
  - Current GPA: **30/30**.
- Oct '19 – Jul '22 **BSc in Computer Science, University of Bologna.**
- GPA: **29.77/30**, top of the class (150 students). Graduation grade: **110 cum laude**.

### Publications

- Jul '23 **Samuele Marro**, Michele Lombardi. Computational Asymmetries in Robust Classification, *40th International Conference on Machine Learning (ICML 2023)*.
- Dec '22 Andrea Asperti, Davide Evangelista, **Samuele Marro**, Fabio Merizzi. Image Embedding for Denoising Generative Models, *Springer Artificial Intelligence Review*.
- Jul '22 **Samuele Marro**, Luca Donno. ERC-5375, *Ethereum Foundation*.
- May '21 **Samuele Marro**, Luca Donno. Green NFTs: A Study on the Environmental Impact of Cryptoart Technologies, <https://arxiv.org/abs/2202.00003>.

### Research and Teaching Experience

- Dec '19 – Today **Student Researcher, University of Bologna, Bologna, Italy.**
- Developed, under profs. Michele Lombardi and Michela Milano, an **adversarial defense** (implemented in **Python + PyTorch**) with certified robustness.
  - Proved that training a robust ReLU model is  $\Sigma_2^P$ -hard, with implications for adversarial defense design.
  - Wrote a **Julia** interface to formally verify the effectiveness of the defense using **MIPVerify.jl** + **Gurobi**.
- Sep '22 – Jan '23 **Teaching Assistant, University of Bologna, Bologna, Italy.**
- Taught the Applied ML module of "Introduction to Machine Learning" for the Fall '22 semester.
- Nov '21 – Mar '22 **Machine Learning Intern, MindIt Srl + Kantar, Bologna, Italy.**
- Developed a **Tensorflow** LSTM implementation compatible with **IBM CPLEX** optimization algorithms.
  - Rewrote Meta's FBProphet time series model in **Tensorflow**.
- Mar '21 – May '21 **Blockchain Environmental Impact Project, University of Bologna, Bologna, Italy.**
- Created a model to estimate the environmental impact of individual transactions on Ethereum.
  - Developed Green NFT Helper, a **JavaScript + Svelte.js** website to help users to reduce their emissions.
- Nov '18 – Jul '19 **PAX Project, L.S. "Leonardo Cocito", Alba, Italy.**
- Trained in **Python + Tensorflow** a **CNN** to identify illegal dumping locations from aerial data.
  - Deployed the model as part of an Android app (written in **Java**) to capture aerial data and relay landfill locations in real time to a quadcopter.

### Research Awards and Scholarships

- Sep '19 – Oct '24 **Institute of Superior Studies Scholarship, 2.5k EUR/year.**
- Scholarship to cover living expenses for ISS members, on top of free housing and tuition.
- May '21 **GreenNFT Award, 3k USD.**
- Award for research contributions on understanding the environmental impact of blockchains.
- Jan '21 **CINECA HPC Grant, 170k core-hours.**
- Grant for the Galileo100 HPC cluster for research on the computational complexity of adversarial attacks.
- Jul '19 **Ancalau Award, 3k EUR.**
- Award and incubator for innovative R&D projects, obtained for building PAX.