

MATTEO ROBBIATI

Doctoral student in Physics

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1, Rue de la petite vie, Saint Genis Pouilly

RESEARCH INTERESTS

- > **Machine Learning** models and their physical application : supervised and unsupervised ML, with a strong focus on **images** recognition and generation;
- > **Quantum computation** : Variational Quantum Circuits, Quantum Machine Learning (QML) and QML HEP applications, hardware-compatible optimization techniques;
- > **Computational Physics** : numerical simulation, Monte Carlo integration.
- > **Cosmology** and **astrophysics**;

EDUCATION

2022 - current Ph.D. candidate at CERN, enrolled with University of Milan.
2019 - 2022 Master degree in Physics, University of Milan, Milan, Italy.
2015 - 2019 Bachelor degree in Physics, University of Milan, Milan, Italy.

EXPERIENCE

Jun. 2022 | **Math and Physics lessons, PRIVATE LESSONS,**
Sep. 2016 | > Private lessons in math and physics to high school students.
simplification of concepts exposition self-check

Dec. 2021 | **Research and data analysis, COOPERATIVE “LA VALLE DI EZECHIELE”,**
Mar. 2021 | > Studying the impact of social cooperatives in getting prisoners back to work and lowering recidivism rates.
> Study of “*Social Impact Bonds*” as a financial instrument to support social welfare.
> Production of an explanatory report on the current conditions of the Italian prison system.
Data analysis networking social impact

PUBLICATIONS

Proceedings of Science

2022 Matteo Robbiati, Stavros Efthymiou, Andrea Pasquale and Stefano Carrazza : *A Quantum Analytical Adam Descent through Parameter Shift Rule using Qibo*, in 41st International Conference on High Energy Physics, (2022). arXiv:2210.10787

PARTECIPATION IN RESEARCH GRANTS

2021 – 2022 **Collaborator**, *Automatic Monte Carlo on GPU*, Linea 2A, University of Milan.

PARTECIPATION IN CONFERENCES AND WORKSHOPS

Nov. 2022 QT4HEP, CERN

TALKS

Jen. 2023 Introduction to quantum computation with **qibo**, QTI-TH Forum, CERN
Jen. 2023 Introduction to quantum machine learning using **qibo**, QTI-TH Forum, CERN
Feb. 2023 Introduction to quantum computation with **qibo**, Nikhef


OUTREACH AND VOLUNTEERING

- 2022 **Scout educator, AGESCI,**
2016 > ability to interact constructively with the group, problem solving.
team-work adaptation interplay relationship challenge
- 2022 **Volunteer, APWOYO ONLUS,**
2019 > management of stressful situations, empathy.
team-work empathy

SKILLS

- GitHub** <https://github.com/MatteoRobbiati>.
- Programming** C/C++, Python, HTML, CSS, Nextjs, BASH, \LaTeX .
- Frameworks** TensorFlow, Keras, Root, Qibo, PennyLane, MPI.
- Data frame** Pandas.
- OS** Linux, Windows.
- Languages** Fluent in english and italian.

Last update
February 21, 2023

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