SIMONE RONCALLO

Quantum Computing Scientist and Tech Enthusiasts

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🔗 simoneroncallo 🐦 @SimoneRoncallo simoneroncallo 🏳 Italian (Native) – English (Proficient)

SUMMARY AND PROFESSIONAL OBJECTIVE

I am a **Physics PhD Student** working in **quantum computing** and **quantum technologies**. My professional objective is to do research in a scientific or technology-oriented environment, applying the **mathematical** and **computational skills** I have acquired so far and contributing to our technological development. I always search for new things to learn and discover, easily getting passionate about new topics and projects, especially when they require a multidisciplinary point of view.

STRENGTHS AND TECHNICAL SKILLS

Coding & Scientific Programming
Experience in classical and **quantum** algorithms, Monte-Carlo simulations, **deep learning** and image processing. **Python** and **MATLAB** proficiency for numerical and symbolic calculations.

Research
Autonomous and collaborative research activity: from project ideation, design and execution. Supervision of Master's Degree research theses. Active involvement in national and international collaborations.

Report Writing & Communication
First-authored publications and technical report writing. Oral contributions to academic conferences, departmental talks and general public events. See Google Scholar and simoneroncallo.com/talks for a detailed list.

⚙ CORE EXPERIENCE

Researcher PhD Student in Physics

@ University of Pavia - Quantum Information Theory Group

📅 Jan 2022 – Ongoing   📍 Pavia, Italy

Research, development and test of **algorithms** and protocols for
- Quantum **computing**
- Quantum imaging and **image processing**
- Quantum state and channel tomography
- Quantum **noise deconvolution**

Fundamental physics research on quantum clocks and arrival time distributions.

Co-supervision of S.M.'s Master thesis "Qudit noise deconvolution".

PROFESSIONAL DEVELOPMENT

Mathematical Foundations of Quantum Machine Learning
@ University of Trento – Jul 2023

Deep Learning and Computer Vision
@ MaLGa (Machine Learning Genoa Center) – Jun 2023

First Certificate in English
@ University of Cambridge ESOL Examinations – Jul 2014

EDUCATION

PhD in Physics
@ University of Pavia, Italy

📅 Jan 2022 – Expected Jan 2025

Quantum Information and Technologies

Master's Degree in Physics
@ University of Genoa, Italy

📅 Sept 2018 – 28 Oct 2020
🎓 110 L (Summa cum Laude)

Theoretical and Mathematical Physics

Bachelor's Degree in Physics
@ University of Genoa, Italy

📅 Sept 2015 – 24 Oct 2018
🎓 110 L (Summa cum Laude)

Scientific High School Degree
@ LS Enrico Fermi, Genoa, Italy

📅 Sept 2010 – 09 Jul 2015
🎓 100/100

COMPUTATIONAL SKILLS

Scientific Programming
Python
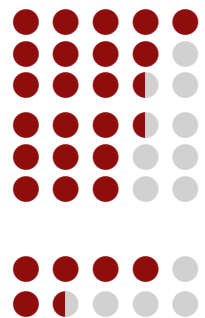   Numpy
   Qiskit
   TensorFlow
MATLAB
Wolfram Mathematica
C++

Markup Languages
LaTeX
HTML & CSS

❝ PUBLICATIONS AND TALKS

Author of **5 peer-reviewed** research papers (4 **first-authored**). Selected publications:
- **S. Roncallo**, L. Maccone, C. Macchiavello "*Quantum JPEG*" AVS Quantum Sci. 5, 043803 (2023)
- **S. Roncallo**, K. Sacha, L. Maccone "*When does a particle arrive?*" Quantum 7, 968 (2023)

Complete record available on Google Scholar.

International conferences speaker (1 **invited** and 2 **contributed** talks). For example:
- QTML 2023 @ CERN "*Channel tomography for quantum noise characterization and mitigation*" 22 Nov 2023 [Link]
- Quantum 2023 @ University of Turin "*Quantum algorithms for image compression*" 15 Sep 2023 [Link]

Scientific outreach talks, such as:
- Casa di Quartiere 13D Certosa in Genoa "*Computer fatti di luce e atomi*" 1 Dec 2023 [Flyer]

Complete record available at simoneroncallo.com/talks.

TEACHING EXPERIENCES

Teaching Assistant
@ University of Pavia

📅 Sept 2022 – Ongoing   📍 Pavia, Italy

Examiner in the Physics II board within the Mathematics Bachelor of Science (BSc).

Maths and Physics Teacher
@ Deledda International School

📅 May 2021 – Dec 2021   📍 Genoa, Italy

Mathematics and Physics classes within the International Baccalaureate (IB) programme. **Lectures in English**.

OTHER EXPERIENCES

Physics Tutor
@ University of Genoa

📅 Mar 2020 – Jul 2020   📍 Genoa, Italy

Physics review classes within the Geology Bachelor of Science (BSc).

Science Communicator
@ Genoa Science Festival

📅 Oct 2019 – Nov 2019   📍 Genoa, Italy

Scientific outreach at the exhibition "Siamo figli degli stelle" (Edition 2019).

REFERENCES

PhD Supervisors:
Prof. Lorenzo Maccone   📇 lorenzo.maccone@unipv.it
Prof. Chiara Macchiavello   📇 chiara.macchiavello@unipv.it

HOBBIES

Hiking   Musical Instruments   Digital Photography   Handcrafting