Giacomo Franceschetto

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Interests

Quantum Information Theory, Quantum Computing, Artificial Intelligence

Education

The Institute of Photonic Sciences (ICFO) *Dec 2023*

Incoming PhD student - "la Caixa" Foundation Fellow

Group: Quantum Information Theory – Antonio Acín, *Project*: Foundations of Quantum Machine Learning

University of Padova *Oct 2021 - Oct 2023*

MSc in Physics of Data – GPA: 29.54/30

- Exchange semester: Leopold-Franzens Universität Innsbruck – MSc in Quantum Sciences.
- Core Lectures: Theoretical Quantum Information, Mathematics and Computation, Neural Networks and Deep Learning.

University of Padova *Oct 2018 - Jul 2021*

BSc in Physics – GPA: 29.30/30, Final Grade: 110/110 cum laude

- Elective Lectures: Computational Physics, Object Oriented Programming, Quantum Information Theory.

Research Experience

Quandela, Paris *Mar 2023 - Sep 2023*

Quantum Applications Engineer Intern

- Working with the theory and applications teams on Quantum Optical Projective Simulation.

Institute for Quantum Optics and Quantum Information (IQOQI), Innsbruck *Oct 2022 - Feb 2023*

Student Intern

Group: Superconducting Quantum Circuits – Gerhard Kirchmair

- Designed cavity-specific sample holders for purcell filter in SolidWorks.
- Assisted in all stages of experimental superconducting qubits process, including qubit fabrication, probing, cooling-down and warming-up of the cryogenic setup.
- Conducted qubit-characterization measurements in dispersive regime.

The Institute of Photonic Sciences (ICFO), Barcelona *Jul 2022 - Sep 2022*

Research Intern

Group: Quantum Information Theory – Antonio Acín, *Supervisor*: Dr. Márcio M. Taddei

- Contributed to CUCO, a nationally-funded project that aims to do research on quantum computing and its application in strategic industries, in collaboration with other two companies.
- Delved into classical and quantum methods to address combinatorial optimisation tasks.
- Analysed and developed different encodings of an optimisation problem of industrial interest in a Quadratic Unconstrained Binary Optimization (QUBO) framework with the perspective of then solving it with a quantum annealer.

Publications, Conferences

M. M. Taddei, G. Franceschetto. **Encodings of binary variables for efficient use in a quantum computer**. *Accepted Talk, ICE-8 and QTYR23* .

Honors

"La Caixa" Foundation Incoming Fellowship. Granted funding to conduct PhD studies, acceptance rate: 5%.

Empowering the Future Experts in Quantum Science and Technology for Europe (EFEQT) 2022/23. Among the 25 Master students selected to perform a one year training programme in Quantum Science and Technology.

***Mille e una lode* Scholarship 2019, 2020, 2021.** Awarded by University of Padova to top 3% students.

Lead the Future Mentorship (LTF). Selected to be mentee for LTF, a leading mentorship non-profit organization for students in STEM, with an acceptance rate below 20%.

Workshops, Summer Schools

Quantum Ideas Factory 2022, Heidelberg, Germany.
Physics of Machine Learning 2022, Asiago, Italy.
X-Ray and Neutron Science - International Student Summer Programme 2021, Grenoble, France.
2021 Qiskit Global Summer School on Quantum Machine Learning, virtually.