

Giacomo Franceschetto

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Interests	Quantum Information Theory, Quantum Computing, Artificial Intelligence	
Education	Ph.D. - "la Caixa" Foundation Fellow <i>The Institute of Photonic Sciences (ICFO), Barcelona (ES)</i> Group: Quantum Information Theory – Antonio Acín	Dec 2023
	M.Sc. in Physics of Data <i>University of Padova – GPA: 29.54/30, Final Grade: 110/110 with honors</i> <ul style="list-style-type: none">• Exchange semester: Leopold-Franzens Universität Innsbruck – MSc in Quantum Sciences.• Core Lectures: Advanced Quantum Information, Mathematics and Computation, Neural Networks and Deep Learning.	Oct 2021 - Oct 2023
	B.Sc. in Physics <i>University of Padova – GPA: 29.30/30, Final Grade: 110/110 with honors</i> <ul style="list-style-type: none">• Elective Lectures: Computational Physics, Object Oriented Programming, Quantum Information Theory.	Oct 2018 - Jul 2021
Work Experience	Quandela, Massy (FR) <i>Quantum Applications Engineer (Remote)</i> <ul style="list-style-type: none">• Developed a software framework to tackle general reinforcement learning tasks with quantum optical projective simulation on single-photon-based quantum computers. Quantum Applications Engineer Intern <i>Group: Superconducting Quantum Circuits – Gerhard Kirchmair</i> <ul style="list-style-type: none">• Implemented a task-tailored version of the quantum optical projective simulation algorithm for a test bed reinforcement learning task on a single-photon-based quantum computer. Institute for Quantum Optics and Quantum Information (IQOQI), Innsbruck (AT) <i>Student Intern</i> <i>Group: Superconducting Quantum Circuits – Gerhard Kirchmair</i> <ul style="list-style-type: none">• Conducted characterization measurements on transmon qubits in the dispersive regime. The Institute of Photonic Sciences (ICFO), Barcelona (ES) <i>Research Intern</i> <i>Group: Quantum Information Theory – Antonio Acín, Supervisor: Dr. Márcio M. Taddei</i> <ul style="list-style-type: none">• Analysed and developed different QUBO encodings of an optimisation problem of industrial interest with the perspective of then solving it with a quantum annealer.	Sep 2023 - Dec 2023 Mar 2023 - Sep 2023 Oct 2022 - Feb 2023 Jul 2022 - Sep 2022
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%.	
Publications	<p><u>G. Franceschetto*</u>, E. Pagliaro*, L. Pereira, L. Zambrano, A. Acín. Hamiltonian learning via quantum Zeno effect. , 2025. [arXiv]</p> <p><u>G. Franceschetto</u>, M. Płodzień, M. Lewenstein, A. Acín, P. Mujal. Harnessing quantum back-action for time-series processing. , 2024. [arXiv]</p> <p><u>G. Franceschetto</u>, A. Ricou. Demonstration of quantum projective simulation on a single-photon-based quantum computer. <i>Physical Review A</i> 110 (6), 062613, 2024. [arXiv]</p> <p>A. Makarov, C. Pérez-Herradón, <u>G. Franceschetto</u> et al. Quantum Optimization Methods for Satellite Mission Planning. <i>IEEE Access</i>, vol. 12, pp. 71808-71820, 2024. [arXiv]</p>	

A. Makarov, M. M. Taddei, E. Osaba, G. Franceschetto et al. Optimization of Image Acquisition for Earth Observation Satellites via Quantum Computing. Accepted paper at IDEAL 2023, 2023. [[arXiv](#)]

Talks and Posters

Harnessing quantum back-action for time-series processing.

- Contributed talk at IQIS 2025 - Italian Quantum Information Science Conference, Bologna, 9 September 2025
- Poster at QCTiP 2025 - Quantum Computing Theory in Practice, Berlin, April 2025
- Contributed talk at Pyrenees Winter School in Quantum Information and Quantum Science, Setcases (Girona), 26 February 2025
- Best poster award at ICFO annual poster session 2024, Barcelona, December 2024
- Poster at ICE-9 Quantum Information in Spain, Puerto de la Cruz (Tenerife), November 2024

Quantum Zeno effect as a reshaping tool for Hamiltonian learning.

- Invited talk at Physics of Data Spring Workshop, University of Padova, 23 May 2024

Demonstration of quantum projective simulation on a single-photon-based quantum computer.

- Contributed talk at ICE-9 Quantum Information in Spain, Puerto de la Cruz (Tenerife), 14 November 2024
- Invited talk at Quantum Information seminar, University of Innsbruck, 30 October 2024
- Invited seminar at IFISC Quantum meetings, University of the Balearic Islands, 21 May 2024
- Invited talk at Open Problems in Quantum Machine Learning, University of Milan, 24 November 2023