Europass Curriculum Vitae

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Personal information

Surname / First name	**Pastorello Davide**
Nationality	Italian
Civil status	Married, 2 daughters
Working address	Piazza di Porta San Donato 5, Bologna
Email	davide.pastorello3@unibo.it
Webpage	https://sites.google.com/view/pastorello-unibo

Current position

2023-present

Assistant Professor (RTD-a, s.s.d. MATH-04/A Mathematical Physics)
Mathematical Physics group, Department of Mathematics
Alma Mater Studiorum - Università di Bologna, Italy

Qualifications

ASN

Habilitation for Associate Professor in Mathematical Physics
(*Abilitazione Scientifica Nazionale* Professore II Fascia, s.c. A1/04)

Research interests

- Mathematical foundations of quantum mechanics;
- Quantum information and computation;
- Quantum and quantum-inspired machine learning;
- Hybrid quantum-classical algorithms;
- Optimization;
- Quantum communication and cryptography;
- Quantum logic;
- Information geometry.

Previous positions

2020-2023

Assistant Professor (RTD-a, s.s.d. MATH-04/A Mathematical Physics)
Quantum Information group, Dept. of Information Engineering and Computer Science, University of Trento

2017-2019

Postdoc, project P.I. with Caritro Foundation grant.
Mathematical Physics group, Department of Mathematics, University of Trento.

2015-2017

Postdoc
Mathematical Physics group, Department of Mathematics, University of Trento.

2011-2014

PhD student at Department of Mathematics, University of Trento.

Education

Ph.D in Mathematics

Institution: University of Trento
Date: 13 November 2014
Evaluation: Excellent
Dissertation: *Geometric Hamiltonian formulation of Quantum Mechanics*
Advisor: prof. Valter Moretti

M.Sc. in Physics

Institution: University of Trento
Date: 30 March 2011
Final Mark: 110/110 cum laude
Thesis: *Gleason's theorem: An approach based on Measurability and Harmonic Analysis*
Advisor: prof. Valter Moretti

Publications

Books:

[34] D. Pastorello ***Concise Guide to Quantum Machine Learning*** Springer Singapore 2023, pages 148, ISBN 978-981-19-6897-9

Published/accepted papers:

[33] E. Zardini, A. Delilbasic, E. Blanzieri, G. Cavallaro, D. Pastorello ***Local Binary and Multiclass SVMs Trained on a Quantum Annealer*** IEEE Transactions on Quantum Engineering, vol. 5, pp. 1-12 (2024)

[32] G. De Palma, T. Klein, D. Pastorello ***Classical shadows meet quantum optimal mass transport*** Journal of Mathematical Physics. 65, 092201 (2024)

[31] E. Botteghi, D. Pastorello, and D. Tantari. ***Cyber Risk Propagation on Networks.*** Lecture Notes in Computer Science (2024): 308-315.

[30] D. Pastorello ***Quantum Machine Learning: Perspectives in Cybersecurity.*** Lecture Notes in Computer Science (2024): 266-274.

[29] D. Pastorello, E. Blanzieri ***Scalable quantum neural networks by few quantum resources*** International Journal of Quantum Information vol. 22, no. 7 (2024)

[28] E. Zardini, E. Blanzieri, D. Pastorello. ***A quantum k-nearest neighbors algorithm based on the Euclidean distance estimation*** Quantum Machine Intelligence 6, 23 (2024).

[27] L. Schmid, E. Zardini, D. Pastorello ***A general learning scheme for classical and quantum Ising machines*** Scipost Physics Core 7, 013 (2024)

[26] E. Tolotti, E. Zardini, E. Blanzieri, D. Pastorello ***Ensembles of quantum classifiers*** Quantum Information & Computation Vol.24 No.3&4 (2024)

[25] E. Zardini, E. Blanzieri, D. Pastorello. ***Implementation and Empirical Evaluation of a Quantum Machine Learning Pipeline for Local Classification***. PLoS ONE 18(11): e0287869 (2023)

[24] E. Blanzieri, D. Pastorello, V. Cavecchia, A. Rumyantsev, M. Maltseva. ***Evaluating the convergence of tabu enhanced hybrid quantum optimization***. Quantum Information Processing 22, 205 (2023)

[23] E. Blanzieri, R. Leporini, D. Pastorello ***Local Approach to Quantum-inspired Classification*** International Journal of Theoretical Physics 62, 4 (2023)

[22] E. Zardini, M. Rizzoli, S. Dissegna, E. Blanzieri, D. Pastorello ***Reconstructing Bayesian Networks on a Quantum Annealer*** Quantum Information and Computation, Vol. 22, No. 15&16, 1320–1350 (2022)

[20] R. Leporini, D. Pastorello. ***An efficient geometric approach to quantum-inspired classifications***. Scientific Reports vol. 12 (1), (2022)

[21] R. Leporini, D. Pastorello ***Quantum-inspired classification based on Voronoi tessellation and pretty-good measurements*** Quantum Reports 4(4), 434-441 (2022)

[19] A. Rumyantsev, D. Pastorello, E. Blanzieri, V. Cavecchia. ***On convergence of tabu-enhanced quantum annealing algorithm*** Communications in Computer and Information Science, vol 1552. Springer, Cham. (2022)

[18] A. Bonomi, T. De Min, E. Zardini, E. Blanzieri, V. Cavecchia, D. Pastorello ***Quantum annealing learning search implementations*** Quantum Information & Computation, v. 22, n. 3&4, p. 181-208 (2022)

[17] R. Leporini, D. Pastorello. ***Support Vector Machines with Quantum State Discrimination*** in Quantum Reports, v. 2021, 3, n. 3 (2021)

[16] D. Pastorello, E. Blanzieri ***A Quantum Binary Classifier based on Cosine Similarity*** Proceedings of: IEEE International Conference on Quantum Computing and Engineering QCE 21, Broomfield, CO, USA, October 17 - 22 (2021)

[15] D. Pastorello, E. Blanzieri, V. Cavecchia. ***Learning adiabatic quantum algorithms over optimization problems*** Quantum Machine Intelligence vol. 3, n. 2 (2021)

[14] M. Pasini, N. Leone, S. Mazzucchi, V. Moretti, D. Pastorello, L. Pavesi. ***Bell inequality violation by entangled single photon states generated from a LASER, a LED, or a halogen lamp.*** Physical Review A, v. 2020, n. 102 (2020)

[13] S. Azzini, S. Mazzucchi, V. Moretti, D. Pastorello, L. Pavesi. ***Single-particle entanglement.*** Advanced Quantum Technologies v. 2020 vol 3, n. 10 (2020)

[12] D. Pastorello. ***Geometric viewpoint on the quantization of a fuzzy logic.*** International Journal of Geometric Methods in Modern Physics Volume 17, Issue 13 (2020)

[11] D. Pastorello, E. Blanzieri. ***Quantum Annealing Learning Search for solving QUBO problems.*** Quantum Information Processing 18: 303 (2019)
DOI: 10.1007/s11128-019-2418-z

[10] D. Pastorello. ***Entanglement, CP-maps and quantum communications***. UMI Springer Lecture Notes vol. 25 "Quantum Physics and Geometry" (Springer International Publishing 2019)

[9] D. Pastorello. ***A geometrization of quantum mutual information.*** International Journal of Quantum Information Vol. 17,No. 02, 1950011 (2019)

[8] D. Pastorello. ***A quantum key distribution scheme based on tripartite entanglement and violation of CHSH inequality***. International Journal of Quantum Information Vol. 15, No. 05, 1750040 (2017)

[7] D. Pastorello. ***A geometric approach to quantum control in projective Hilbert spaces***. Reports on Mathematical Physics Vol. 79, No. 1 (2017)

[6] D. Pastorello. ***Open-loop quantum control as a resource for secure communications***. International Journal of Quantum Information. Vol. 14, No. 02, 1650010 (2016)

[5] D.Pastorello. ***Geometric Quantum Mechanics and applications***. International Journal of Geometric Methods in Modern Physics. Vol. 13, No. Supp. 1, 1630017 (2016)

[4] V. Moretti and D. Pastorello: ***Frame functions in finite-dimensional quantum mechanics and its hamiltonian formulation on complex projective spaces***. International Journal of Geometric Methods in Modern Physics Vol. 13, No. 02, 1650013 (2016)

[3] D. Pastorello. ***A geometric hamiltonian description of composite quantum systems and quantum entanglement.*** International Journal of Geometric Methods in Modern Physics v. 12, n. 7, 1550069 (2015)

[2] D.Pastorello. ***Geometric hamiltonian formulation of quantum mechanics on complex projective spaces***. International Journal of Geometric Methods in Modern Physics Vol. 12, No. 08, 1560015 (2015)

[1] V. Moretti and D. Pastorello. ***Generalized spherical harmonics, frame functions and Gleason theorem*** Annales Henri Poincaré v. 2013, 14, n.5, p. 1435-1443 (2013)

Submitted papers and preprints:

- G. De Palma, D. Pastorello ***Quantum concentration inequalities and equivalence of the thermodynamical ensembles: an optimal mass transport approach*** (arXiv:2403.18617)
- A.M. Hernandez, F. Girardi, D. Pastorello, G. De Palma ***Quantitative convergence of trained quantum neural networks to a Gaussian process*** (arXiv:2412.03182)
- D. Franch, E. Zardini, E. Blanzieri, D. Pastorello ***Consensus ranking by quantum annealing*** (arXiv:2501.08664)
- A.M. Hernandez, D. Pastorello, G. De Palma ***Mean-field limit from general mixture of experts to quantum neural networks*** (arXiv:2501.14660)

Selected conferences, workshops, invited lectures, and seminars

The symbol * means Invited Speaker

Winter 2025 — *Lecture "Fundamentals of Quantum Machine Learning" as *Springer Nature Video*. (invited by Springer Nature).

Bari, Jan 29-31 2025 — Workshop of Unione Matematica Italiana "Mathematics for Artificial Intelligence and Machine Learning" at University of Bari.

Trento, Dec 2024	*Invited lecture "Quantum Neural Networks: state of the art and future perspectives" for the transdisciplinary PhD program in Quantum Science and Technologies. University of Trento.
Reggio Emilia, 7 Nov 2024	*Workshop *Supercalcolo e intelligenza artificiale* organized by Unindustria (headed by Confindustria).
Pisa, 24-27 Sep 2024	*International conference *Physics in the AI era* organized by University of Pisa and Scuola Normale Superiore.
Firenze, 17 Sep 2024	*International conference *SafeComp24* organized by University of Firenze.
Lignano S. (UD), 1-6 Sep 2024	*Lecturer at *European Summer School on Quantum Artificial Intelligence* organized by University of Udine and Digital Technologies District of Friuli Venezia Giulia.
Bologna, 1 July 2024	*Seminar for the cycle *Topics in Mathematics*, University of Bologna.
Bologna, 10 June 2024	*SERICS Workshop, University of Bologna.
Verona, 27 May 2024	*Invited lecture "Quantum Machine Learning: an overview and some examples" for the Master in Computer Science, University of Verona.
Les Diablerets, 25 Feb - 1 Mar	International workshop "Quantum Information" at SwissMAP Research Station.
Trento, 4 Dec 2023	*Invited lecture "On the learning capability of Ising machines" for the Master in Computer Science, University of Trento.
Torino, 11-15 Sep 2023	International workshop *Quantum 2023* organized by University of Torino and Italian Institute of Metrology (INRiM).
Verona, 6 June 2023	**Quilab Workshop* at University of Verona.
Bologna, 29 Nov. 2022	*Guest at Dept. of Mathematics, University of Bologna.
On-line event, 15-18 Aug. 2022	*Conference on Modern Management based on Big Data* organized by Keimyung University, South Korea.
Tropea, 27June-2July 2022	*International Quantum Structures Association Conference 2022.
Lugano, 20-22 June 2022	*IEEE International Workshop on *Quantum & Biomedical Applications, Technologies, and Sensors* q-BATS 2022.
On-line event, 17-22 Oct 2021	IEEE International Conference on *Quantum Computing and Engineering (QCE21)*, Broomfield, CO, USA.
On-line event, 22-30 July 2021	*Conference *Information Engines at the Frontiers of Nanoscale Thermodynamics* organized by Telluride Science Research Center and University of California, Davis.
On-line event, 10 June 2021	*Workshop *Quantum Computing* organized by the IT company ATOS.
On-line event, 24 Nov. 2020	*SPIE quantum computing workshop *Photonics as a key enabling technology*.
Bologna, 19 Dec. 2019	*Workshop *Quantum Computing and High Performance Computing* at CINECA.
Verona, Apr. 2019	*Visiting at Dept. of Computer Science, University of Verona.
Grenoble, 18 - 22 Feb. 2019	*European Quantum Technology Conference 2019* at University of Grenoble. (International conference of the European initiative *Quantum Flagship*).

Trento, 19 Nov. 2018	*Scientific outreach conference *La frontiera delle tecnologie quantistiche* at Fondazione Caritro, Trento.
Verona, 25 Oct. 2018	*Quantum Computing Workshop *Quantum@Univr* at University of Verona.
Trieste, 11-18 May 2018	*Workshop *Trieste Junior Quantum Days 2018* organized by University of Trieste and SISSA (awarded as best talk)
Heidelberg, 19 - 21 Mar. 2018	Workshop *Beyond digital computing* at University of Heidelberg.
Bologna, 23 - 25 Nov. 2017	*Workshop *Physics and Geometry* at University of Bologna.
Levico Terme (Trento), 4 - 6 July 2017	*Workshop *Geometry and Quantum Physics* organized by University of Trento.
Vietri sul Mare (Salerno), 6 - 10 Apr. 2017	Workshop *Current Problems in Theoretical Physics* organized by University of Naples "Federico II" and University of Salerno.
Bremen, 12 - 17 Mar. 2017	Deutsche Physikalische Gesellschaft conference.
Trento, 1-2 Sept. 2016	*Lecturer at the summer school *Siquro* organized by University of Trento and Bruno Kessler Foundation.
Munich, June 2016	*Visiting at Dept. of Mathematics, Technische Universität München.
Brixen, 8-13 Feb. 2016	Workshop *Mathematical Challenges in Quantum Mechanics* organized within the FIR project *Cond-Math*.
Zaragoza, 30 Aug. - 4 Sept., 2015	XXIV International Fall Workshop on Geometry and Physics.
Rome, Oct. 2014	*Visiting PhD student at Department of Mathematics and Physics, University of Roma Tre.
Levico Terme (Trento), 15-19 Sept. 2014	Workshop *Operator and Geometric Analysis in Quantum Theory*. (member of the local committee)
Granada, 2-5 Sept. 2014	XXIII International Fall Workshop on Geometry and Physics.
Bari, 29 June - 4 July 2014	*Workshop *Quantum Mechanics and applications*, University of Bari.
Vienna, 19-23 May 2014	*AQFT14 workshop *Algebraic Quantum Field Theory: Its status and its future*, organized by Erwin Scrödinger Institute.
Trento, 26 Feb. 2014	*Opening of the Academic Year of doctoral schools in Mathematics and Biomolecular Science, University of Trento.
Trento, 3 Feb. 2014	*Math-Physics joint seminar organized by BEC center (Unitn).
Napoli, Jan. 2014	*Visiting PhD student at Department of Physics of University of Naples *Federico II*.
Hamburg, Mar-Apr. 2012	*Visiting PhD student and speaker at DESY (Deutsches Elektronen Synchrotron).
Trieste, 13-18 Feb. 2012	Workshop *Quantum Geometry and Matter*, organized by SISSA.

Awards and Grants

2024 — **Certificate of merit** issued by Accademia delle Scienze dell'Istituto di Bologna within the initiative "Top 10 nelle Scienze".

2022 — 2-year Q@TN **grant** (100K€) for the renewal of the RTD-a position at University of Trento (declined for the appointment at University of Bologna).

2018 — **Award for best talk** at Trieste Junior Quantum Days 2018.

2017 — **Grant** (50K€) of Fondazione Caritro for the project *Research and development of quantum algorithms and quantum cryptographic protocols*.

2016 — **Award for best PhD thesis in Mathematics** at University of Trento a.y. 2013/2014. Awarded by Rector Paolo Collini on 14 May 2016.

Projects

2024-present — P.I. of the ISCRA[1] project "Neural_QA: Neural networks over quantum annealing architectures: from mathematics to implementations" (University of Bologna and University of Trento) with access to quantum computing resources of CINECA.

2023-present — Team member of the project SERICS (PE00000014) under the MUR National Recovery and Resilience Plan funded by the European Union - NextGenerationEU.

2021-present — Proponent of the project "Hybrid classical-quantum algorithms for Sampling Problems (HyClassQSampling)" 1 PhD grant funded by Q@TN consortium.

2021-2024 — P.I. of the ISCRA project "Testing the learning performances of quantum machines" funded by Q@TN consortium, INFN and CINECA.

2020-2023 — P.I. of the project "Implementation of Quantum Annealing Learning Search to solve optimization problems" (DISI, CNR-IMEM, German Aerospace Center) with access to the quantum computing resources of Forschungszentrum Jülich.

2017-2019 — P.I. of the project "Research and development of quantum algorithms and quantum cryptographic protocols" cofunded by Fondazione Caritro (50k€), involving Dept. of Mathematics, DISI, and INFN.

Jan.-June 2015 — Coordinator of *CryptolabTN-IKS* industrial project on applications of anomaly detection models and machine learning to biometric recognition for users of mobile devices.

Patents

2020 (filed) - 2022 (granted) 2023 (US patent) — **Incoherent source for intraparticle entanglement** (Inventors: S. Mazzucchi, V. Moretti, M. Pasini, D. Pastorello, L. Pavesi. Number: 102020000005521).

The invention is a small-scale source of single-photon entangled states for applications to **quantum information processing**, **cryptography** and **certified random number generation**.

[1] *Italian Super-Computing Resources Allocation* program by CINECA, the Italian center of high performance computing.

Collaborations at:

University of Trento	Dept. of Mathematics
	Dept. of Physics
	Dept. of Information Engineering and Computer Science
Tech. Universität München	Dept. of Physics
CINECA	Quantum Computing Lab
Forschungszentrum Jülich	Simulation and Data Lab (SDL)
University of Verona	Dept. of Computer Science
University of Bergamo	Dept. of Economics
German Aerospace Center	Institute for Software Technology
Consiglio Nazionale delle Ricerche (CNR)	Institute of Materials for Electronics and Magnetism

Teaching activity

Summer/Winter Schools

1-6 Sept 2024 — **European Summer School on Quantum AI**
organized by University of Udine and Digital Technologies District of Friuli Venezia Giulia.

14-16 Sept 2022 — **TQT-Q@TN School on Quantum Science and Technology**
organized by Trieste Institute for Theoretical Quantum Technologies (TQT) and Quantum Science and Technology LAB in Trento (Q@TN consortium).

1-3 Sept 2016 — **Siquro. Summer school on Quantum Cryptography**
organized by University of Trento and Bruno Kessler Foundation.

Lecturing

Academic Years 2024/2025, 2023/2024 — **Mathematical methods of Quantum Mechanics**,
Master in *Mathematics* (University of Bologna - Unibo).

Linear Algebra,
Bachelor in *Chemistry and Technologies for the Environment and Materials* (Unibo).

A.Y. 2024/2025 — **Quantum Annealing SDKs**,
Master (2nd level) in *High-Performance and Quantum Computing* (Unibo).

A. Y. 2022/2023, 2021/2022, 2020/2021 — **Quantum Machine Learning**,
Master in *Computer Science* (University of Trento - Unitn).

A.Y. 2017/2018 — PhD course **Introduction to Quantum Information**,
Doctoral School in *Information and Communication Technology* (Unitn).

A. Y. 2016/2017 — PhD course **Foundations of Quantum Information and Quantum Cryptography**,
Doctoral School in *Mathematics* (Unitn).

A.Y. 2014/2015 — Additional course of **Mathematical Analysis**,
Bachelor in *Environmental and Civil Engineering* (Unitn).

Teaching support

A.Y. 2018/2019 2016/2017 2015/2016 2014/2015	**Mathematical Foundations for Computer Science**, bachelor in *Computer Science* (Unitn).
A.Y. 2018/2019 2017/2018	**Geometry B** (General topology), bachelor in *Mathematics* (Unitn).
A.Y. 2017/2018	**Mathematical Analysis I**, bachelor in *Mathematics* and *Physics* (Unitn).
A.Y. 2016/2017	**Mathematical Analysis II**, bachelor in *Industrial Engineering* (Unitn).
A.Y. 2016/2017 2015/2016 2014/2015	**Mathematical Analysis II**, bachelor in *Physics* (Unitn).
A.Y. 2014/2015	**Mathematical Analysis I**, bachelor in *Enviromental and Civil Engineering* (Unitn).
A.Y. 2013/2014	**Discrete Mathematics II**, bachelor in *Computer Science* (Unitn).
A.Y. 2012/2013	**Geometry III** (Algebraic topology), bachelor in *Mathematics* (Unitn).
A.Y. 2012/2013	**Geometry I** (Linear algebra), bachelor in *Mathematics* (Unitn).

PhD supervision

2023-present	Co-advisor of the PhD student Emiliano Tolotti for the doctoral program in ***Information and Communication Technology*** (University of Trento) on topics of quantum computing and quantum machine learning.
2022-present	Co-advisor of the PhD student Sebastian Nagies for the doctoral program in ***Physics*** (University of Trento) on topics of quantum computing and quantum machine learning
2021-present	Co-advisor of the PhD student Veronica Panizza for the doctoral program in ***Physics*** (University of Trento) on topics of quantum computing applied to biophysics.
2020-2024	Co-advisor of the PhD student Enrico Zardini for the doctoral program in ***Information and Communication Technology*** (University of Trento) on topics of quantum computing and quantum machine learning.

Thesis supervision

A.Y. 2024/2025	Advisor for a Master thesis in ***Mathematics*** (Unibo) on applications of quantum annealing to computational chemistry.
A.Y. 2024/2025	Advisor for a Master thesis in ***Mathematics*** (Unibo) on quantum contextuality and Bell's theorem in terms of abstract C^*-algebras.
A. Y. 2024/2025	Co-Advisor for a Master thesis in ***Mathematics*** (Unibo) on a statistical characterization of quantum neural networks.
A.Y. 2023/2024	Co-Advisor for a Master thesis in ***Mathematics*** (Unibo): *Security of complex networks: An approach based on game theory*.

A.Y. 2023/2024	Advisor for a Master thesis in ***Computer science***: (Unitn) *An elite quantum diffusion recombination procedure*.
A.Y. 2023/2024	Advisor for a Master thesis in ***Computer Science*** (Unitn): *Dense associative memories and deep feedforward neural networks implemented via quantum annealing*.
A.Y. 2023/2024	Advisor for a Master thesis in ***Physics*** (unitn): *Optimizing Kemeny Ranking: Harnessing pairwise models with quantum annealing.*
A.Y. 2022/2023	Advisor for a Master thesis in ***Computer Science*** (Unitn): *Ensembles of quantum classifiers*.
A.Y. 2022/2023	Advisor for a Master thesis in ***Physics*** (Unitn): *Design and implementation of a hybrid parametric model on a Quantum Annealer and application to Hamiltonian learning*.
A.Y. 2021/2022	Advisor for a Bachelor thesis in ***Physics*** (Unitn): *Binary classification on an IBM quantum computer.*
A.Y. 2021/2022	Co-Advisor for a Bachelor thesis in **Computer Science** (Unitn): *Optimal Arbitrage by Quantum Computations*.
A.Y. 2021/2022	Co-advisor for a Bachelor thesis in ***Computer Science*** (Unitn): *Bayesian networks for feature selection over quantum annealers*.
A.Y. 2020/2021	Co-advisor for a Bachelor theses in ***Computer Science*** (Unitn) *Implementation and testing of Bayesian network structure learning using Quantum Annealing*.
A.Y. 2019/2020	Co-advisor for a Bachelor thesis in ***Computer Science*** (Unitn): *C++ implementation of a hybrid classical-quantum algorithm.*
A.Y. 2019/2020	Co-advisor for a Bachelor thesis in ***Computer Science*** (Unitn): *Quantum Annealing Learning Search Python Implementation.*

Service activity

2024-present	Referent for the curricular internships at CINECA. Dept. of Mathematics, University of Bologna.
2025	External commissioner for a PhD defense, University of Verona.
2024	Member of selection boards for recruitment of research fellows. Dept. of Mathematics, University of Bologna.
2020-2023	Member of the outreach and communication board. Dept. of Information Engineering and Computer Science, University of Trento
2022	Coordinator of the cycle of seminars on Quantum Machine Learning. Dept. of Information Engineering and Computer Science, University of Trento
2017-2019	Coordinator of the Mathematical Physics seminars. Dept. of Mathematics, University of Trento.
2013-2019	Member of the examination board for the course "Analytical Mechanics" Dept. of Mathematics, University of Trento.

Memberships

INdAM	*Istituto Nazionale di Alta Matematica*
INFN	*Istituto Nazionale di Fisica Nucleare*
CINI	*Cybersecurity National Lab*
QUILAB	*Quantum Informatics Laboratory*

Peer-reviewing

Journal Reviewer	Journals by: Springer Nature, Elsevier, IEEE, World Scientific.
Conference Reviewer	Mathematical Foundations of Computer Science (MFCS) Quantum Physics and Logic (QPL) Italian Conference on CyberSecurity (ITASEC) International Conference on Theory and Applications of Satisfiability Testing (SAT)
Other peer-rev. activities	Reviewer of the project proposals for the *Jülich UNified Infrastructure for Quantum computing (JUNIQ)* at Forschungszentrum Jülich, Germany.

Science outreach and public engagement activities

Bologna, 20 Jan 2025	Seminar at the event *Quantum meets AI: Synergies for the future* organized by AlmaQ interdepartmental consortium.
Bologna, 21 Nov 2024	Seminar *Assemblare il genoma con un computer quantistico*. "Top 10 nelle Scienze" at Accademia delle Scienze dell'Istituto di Bologna.
Reggio E., 7 Nov 2024	Lecture *AI e computer quantistici* at Unindustria (chapter of Confindustria).
Trento, 21 Sep 2023	Seminar *Machine learning with quantum computers*. Meetup Speck&Tech.
Trento, 3 Mar 2022	Seminar *Machine learning with quantum computers*. ICT Days, University of Trento.
Trento, 24 Sept 2021	Lecture *Computer Quantistici: cosa sono e a cosa servono i calcolatori basati sulla fisica quantistica*. European Researchers' Night 2021.
Trento, 18 Nov 2019	Lecture *Macchine quantistiche: stato dell'arte e sfide future* organized by University of Trento and Fondazione Caritro.
Trento, 19 Nov 2018	Lecture *La frontiera delle tecnologie quantistiche* organized by University of Trento and Fondazione Caritro

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