# Alba Cervera-Lierta | Full CV

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## Contents

## Education

**Doctor of Philosophy (PhD) in Physics**    **Universitat de Barcelona**
*Supervisor: Dr. José Ignacio Latorre*    *2015 – 2019*
Title: Maximal Entanglement: Applications to Quantum Computation and Particle Physics.

**Master in Astrophysics, Particle Physics and Cosmology**    **Universitat de Barcelona**
*Specialized in Particle Physics and Gravitation.*    *2014 – 2015*
Thesis title: Non-unitary neutrino oscillations.

**Bachelor in Physics**    **Universitat de Barcelona**
*Specialized in Fundamental Physics*    *2009 – 2014*
Thesis title: Scaling of entanglement support for iTEBD algorithm.

## Positions

### Research

**Senior Researcher**    **Barcelona Supercomputing Center**
*Quantic group (CASE department), Ramón y Cajal fellow since 2024.*    *2021 – Present*

**Postdoctoral Fellow**    **University of Toronto**
*Alán Aspuru-Guzik group*    *2019 – 2021*

**Technical Researcher**    **Barcelona Supercomputing Center**
*Quantic group (CASE department)*    *2017 – 2019*

**Specialized Technician**    **Universitat de Barcelona**
*Project: "Entanglement, tensor networks and cold gases"*    *2014*

### Coordinator

**EuroQCS-Spain project**    **Barcelona Supercomputing Center**
*Quantum computing technology responsible (budget: 12,5 M €)*    *2022 – Present*

**Quantum Spain project**    **Barcelona Supercomputing Center**
*Project Principal Investigator (budget: 22M €)*    *2021 – Present*

### Visitor

**Center of Quantum Technologies**    **National University of Singapore**
*Prof. Kwek Leong Chuan group.*    *May 2017*

**Instituto de Física Teórica**    **CSIC**
*Dr. César Gómez's group.*    *Feb 2017*

**Grupo de investigación en Información y Computación Cuántica**    **Universidad Politécnica de Madrid**
*Dr. Vicente Martín group*    *Sep 2016*

**Rudolph Pierls Institute for Theoretical Physics**    **University of Oxford**
*Dr. Juan Rojo's group.*    *Jan - May 2016*

# Funded projects

# Awards and Honors

**DTIC - Ingenierías UPF research award for women researchers**     **Universitat Pompeu Fabra**
*May 2024*

**PhD Excellent Cum Laude**     **Universitat de Barcelona**
*Jun 2019*

***Teach Me QISKit Award***     **IBM**
*Jun 2018*

# Publications

Link to Google Scholar and OrcID.

**18. Quantum Circuits for High-Dimensional Absolutely Maximally Entangled States**     **Preprint**
*B. Casas, G. Rajchel-Mieldzioć, S. Ahmad Rather, M. Płodzień, W. Bruzda,*     *2025*
*A. Cervera-Lierta, K. Życzkowski*, arXiv:2504.05394 [quant-ph].

**17. Multidimensional Fourier series with quantum circuits**     **Phys. Rev. A**
*B. Casas, A. Cervera-Lierta*     *2023*
Physical Review A 107, 062612 (2023).

**16. Design of quantum optical experiments with Logic Artificial Intelligence**     **Quantum**
*A. Cervera-Lierta, M. Krenn, A. Aspuru-Guzik*     *2022*
Quantum **6**, 836 (2022).

**15. On scientific understanding with artificial intelligence**     **Nat. Rev. Phys.**
*M. Krenn, R. Pollice, S. Y. Guo, et. al.*     *2022*
Nature Review Physics (2022).

**14. Toward Reliability in the NISQ Era: Robust Interval Guarantee**     **Phys. Rev. Research**
**for Quantum Measurements on Approximate States**     *2022*
*M. Weber, A. Anand, A. Cervera-Lierta, J. S. Kottmann, T. H. Kyaw, et. al.*
Physical Review Research **4**, 033217 (2022).

**13. Programming Physical Quantum Systems with Pulse-Level Control**     **Front. Phys.**
*K. N. Smith, G. S. Ravi, T. Alexander, et. al.*     *2022*
Frontiers in Physics, **672** (2022).

**12. Learning Interpretable Representations of Entanglement in Quantum Optics Experiments using Deep Generative Models**

Nat. Mach. Intell.
2021

D. Flam-Shepherd, T. Wu, X. Gu, <u>A. Cervera-Lierta</u>, M. Krenn, A. Aspuru-Guzik
Nature Machine Intelligence **4** (6), 544-554 (2022).

**11. Experimental high-dimensional Greenberger–Horne–Zeilinger entanglement with superconducting transmon qutrits**

Phys. Rev. Appl.
2022

<u>A. Cervera-Lierta</u>, M. Krenn, A. Aspuru-Guzik, A. Galda
Phyical Review Applied **17**, 024062 (2022).

**10. Noisy intermediate-scale quantum algorithms**

Rev. Mod. Phys.
2022

K. Bharti, <u>A. Cervera-Lierta</u>, T. H. Kyaw, T. Haug, et. al.
Review of Modern Physics **94**, 015004 (2022).

**9. The Meta-Variational Quantum Eigensolver (Meta-VQE): Learning energy profiles of parameterized Hamiltonians for quantum simulation**

PRX Quantum
2021

<u>A. Cervera-Lierta</u>, J. S. Kottmann and A. Aspuru-Guzik
PRX Quantum **2**, 020329 (2021).

**8. Tequila: A platform for rapid development of quantum algorithms**

Quantum Sci. Technol.
2021

J. S. Kottmann, S. Alperin-Lea, T. Tamayo-Mendoza, <u>A. Cervera-Lierta</u> et. al.
Quantum Science and Technology **6** 024009 (2021).

**7. Data Re-uploading for a Universal Quantum Classifier**

Quantum
2020

A. Pérez-Salinas, <u>A. Cervera-Lierta</u>, E. Gil-Fuster, J. I. Latorre
Quantum **4**, 226 (2020).

**6. Maximal Entanglement: Applications in Quantum Information and Particle Physics**

PhD Thesis
2019

<u>A. Cervera-Lierta</u>
arXiv:1906.12099 [quant-ph].

**5. Quantum Circuits for Maximally Entangled States**

Phys. Rev. A
2019

<u>A. Cervera-Lierta</u>, J. I. Latorre, D. Goyeneche
Physical Review A **100**, 022342 (2019).

**4. Exact Ising Simulation on a Quantum Computer**

Quantum
2018

<u>A. Cervera-Lierta</u>
Quantum **2**, 114 (2018).

**3. Multipartite Entanglement in Spin Chains and the Hyperdeterminant**

J. Phys. A Math. Theor.
2018

<u>A. Cervera-Lierta</u>, A. Gasull, J. I. Latorre and G. Sierra.
Journal of Physics A: Mathematical and Theoretical **51**, 505301 (2018).

**2. Maximal Entanglement in High Energy Physics**

SciPost Phys.
2017

<u>A. Cervera-Lierta</u>, J. I. Latorre, J. Rojo and L. Rottoli
SciPost Physics **3**, 036 (2017).

**1. Operational Approach to Bell Inequalities: Application to qutrits**

Phys. Rev. A
2016

D. Alsina, <u>A. Cervera</u>, D. Goyeneche, J. I. Latorre and K. Zyczkowski
Physical Review A **94**, 032102 (2016).

## Reports and white papers

**When matter and information merge into "Quantum"**

Commun. Phys.
2023

R. Aguado, A. Cervera-Lierta, A. Correia, et. al., Communications Physics **6**(1) 266 (2023).

**Workflows Community Summit 2022: A Roadmap Revolution**

Technical Report
2023

R. Ferreira da Silva, R. M. Badia, V. Bala, et. al.
ORNL/TM-2023/2885, arXiv:2304.00019 [cs.DC].

## Books, chapters and notes

**Machine learning in quantum sciences**

Cambridge University Press
2025

A. Dawid, J. Arnold, B. Requena, et. al.
Cambridge University Press 2025, arXiv:2204.04198 [quant-ph].

**Simulation of the 1d XY model on a quantum computer**

Preprint
2024

M. Farreras, <u>A. Cervera-Lierta</u>

arXiv:2410.21143 [quant-ph].

## Software development

*Libraries:*

**Quantum computing open-source library "Tequila"** **Python**
*Project collaborator, https://github.com/tequilahub/* *2021*

*Codes and demos:*

**Logic AI algorithm "Klaus"** **Mathematica**
*Creator and developer, https://github.com/AlbaCL/Klaus* *2022*

**Meta Variational Quantum Eigensolver** **Python**
*Co-creator and developer., https://github.com/aspuru-guzik-group/Meta-VQE* *2021*

# Talks and seminars

Some of my talks' videos are listed in my Youtube Channel playlists.
Virtual talks due to COVID-19 pandemic.

## Keynote

**Lliçó Innaugural** **UPF**
*"Tecnologies quàntiques: passat, present i futur d'una (r)evolució tecnològica"* *Sep 30 2024*
Enginyeries Universitat Pompeu Fabra.

**100tífiques** **UPC**
*"Tecnologies quàntiques: passat, present i futur d'una (r)evolució tecnològica"* *Feb 1 2024*
Fundació Catalana per a la Recerca i la Innovació.

**The quest for the quantum computer** $10^{th}$ **BSC Doctoral Symposium**
*Barcelona, Spain* *May 9, 2023*

**The Noisy Intermediate-Scale Quantum era** **CARLA 2022**
*Porto Alegre, Brasil* *Sep 28-30, 2022*

**Margarita Salas Honoris Causa PhD act** **Universidad de Extremadura**
*"De las computadoras a los ordenadores"* *Feb 2 2019*

## Colloquium

**Computación cuántica: pasado, presente y futuro** **Universidad de Alicante**
**de una revolución tecnológica** *Sep 28, 2023*
Opening academic year Aula de Ciencia y Tecnología, Universidad de Alicante, Spain.

**Tecnologies quàntiques: present i futur** **ICCUB Colloquia**
*Universitat de Barcelona, Spain.* *Feb 16, 2022*

## Invited

**Quantum computers: the new supercomputer partition** **Barcelona, Spain.**
*HiPEAC 2025, Classical HPC & QC: the way to foster the integration workshop* *Jan 20, 2025*

**Quantum computers: the new supercomputer partition** **Atlanta, USA**
*SC24* *Nov 20, 2024*

**Design of quantum optical experiments with logic artificial intelligence** **ICFO, Barcelona**
*SCOP24* *Oct 3, 2024*

**Building the Spanish Quantum Computer** **Quantera**
*Quantum Technologies in Europe, Madrid, Spain* *Nov 23, 2023*

**Quantum-HPC integration: challenges and opportunities** **Hannover, Germany**
*EQTC 2023* *Oct 19, 2023*

**Variational Quantum Algorithms** **CSIC, Madrid**
*QTYR 2023* *Jul 04, 2023*

**Quantum Spain in the NISQ era**
**BSC-CNS**
*QBN Meeting on Quantum Computing and Applications*
*Jun 15, 2023*

**High-dimensional quantum computation: opportunities and challenges**
**ICFO**
*Symposium on Open-Source Tools for Quantum Computing & Simulation*
*Mar 31, 2023*

**High-dimensional quantum computation**
**QT4HPC**
*CERN*
*Nov 2, 2022*

**Quantum algorithms in near term devices**
**New Trends in Computational Chemistry**
*IQTC, University of Barcelona (Spain).*
*Sep 9, 2022*

**Quantum Spain**
**Quantum 2022**
*Barcelona (Spain).*
*Jun 22, 2022*

**Quantum Spain: un impulso para el ecosistema de computación cuántica**
**Jornada cuántica**
*NASERTIC, Pamplona (Spain).*
*May 4, 2022*

**Quantum Spain: un impulso para el ecosistema de computación cuántica**
**Jornada Eco. Cuántico**
*SCAYLE, León (Spain).*
*Mar 1, 2022*

**Near term quantum computation: opportunities and challenges**
**Quantum 2021**
*Bilbao (Spain).*
*Nov 24, 2021*

**Noisy Intermediate-Scale Quantum era**
**JURES 2021**
*Virtual (*).*
*Sep 17, 2021*

**Noisy Intermediate-Scale Quantum algorithms**
**CERN**
*Perspectives on Quantum Sensing and Computation for Particle Physics. Virtual (*).*
*Jul 15, 2021*

**The Meta-Variational Quantum Eigensolver**
**Machine Learning for Quantum X**
*Virtual (*).*
*Jul 6, 2021*

**The Meta-Variational Quantum Eigensolver**
**QWorld Quantum Science Days**
*Virtual (*).*
*Jun 1, 2021*

**Chronicles of Entangland, the foundation of the SC town**
**Qiskit Hackathon Europe**
*Virtual (*).*
*May 26, 2021*

**Experimental high-dimensional GHZ entanglement with**
**Pulse-level Quantum Control Workshop**
***superconducting transmon qutrits***
*May 18, 2021*
*Chicago. Virtual (*).*

**Maximal Entanglement in High Energy Physics**
**APS April Meeting**
*Topical Group on Hadronic Physics. Virtual (*).*
*Apr 15, 2021*

**Noisy Intermediate-Scale Quantum algorithms**
**Universidad Iberoamericana**
*Virtual (*).*
*Apr 13, 2021*

**Please, feed the quantum troll!**
**Q-Hack 2021**
*Virtual (*).*
*Feb 19, 2021*

**Testing and designing quantum algorithms for the NISQ era**
**INT-20-3**
*Quantum Computing and Simulation on Near-Term Devices. Virtual (*).*
*Nov 21, 2020*

**Maximal Entanglement in High Energy Physics, Quantum Entanglement**
**CFNS Stony Brook**
***at Collider Energies***
*Sep 11, 2018*
*Stony Brook (United States).*

**Exact simulation of a Quantum Phase Transition**
**Quantum Phase Transitions**
***on a quantum computer***
*Apr 05, 2018*
*Barcelona (Spain).*

**Emergence of Gauge Symmetry**
**Universidad Complutense de Madrid**
***from a Maximal Entanglement Principle***
*Sep 21, 2016*
*Madrid (Spain).*

## Contributed

**The Meta-Variational Quantum Eigensolver** — **APS March Meeting 2021**
*Virtual (*).* — *Mar 18, 2021*

**Data re-uploading for a universal quantum classifier** — **Q-Turn 2020**
*Virtual (*).* — *Nov 24, 2020*

**Data re-uploading for a universal quantum classifier** — **QTML 2020**
*Quantum Techniques Machine Learning. Virtual (*).* — *Nov 12, 2020*

**Maximal Entanglement in Quantum Computation** — **BSC Severo Ochoa Doctoral Symposium**
*Barcelona (Spain).* — *May 07, 2019*

## Seminars

**Computació quàntica: reptes i oportunitats** — **UPC**
*FIB* — *Mar 11, 2025*

**The Noisy Intermediate-Scale Quantum Computation** — **Universitat de Girona**
*IQCC* — *Jan 21, 2025*

**Computación cuántica: pasado, presente y futuro de una revolución tecnológica** — **Telefónica**
*Madrid, Spain* — *Feb 21, 2024*

**Quantum-HPC integration: challenges and opportunities** — **LG Toronto**
*Toronto, Canada* — *Oct 26, 2023*

**Quantum Spain: creating a public quantum-HPC infrastructure** — **Quantum Cafe**
*European Comission (Virtual).* — *Sep 21, 2023*

**A roadmap to quantum computing integration into HPC infrastructures** — **RISC2 Seminar Series**
*Mar 15, 2023*

**Noisy Intermediate Scale Quantum Computation** — **Universidad de Zaragoza**
*Dept. Condensed Matter Physics.* — *Jun 3, 2022*

**Noisy Intermediate Scale Quantum Computation** — **Universidad Nacional de Colombia**
*Virtual.* — *Apr 21, 2022*

**Design of quantum optical experiments with logic artificial intelligence** — **MPQ**
*Quantum Optics group seminar.* — *Oct 29, 2021*

**High-dimensional quantum computing experiments** — **CQT**
*Prof. Manas Mukherjee group meeting (Singapore, Virtual *)* — *Aug 03, 2021*

**Maximal Entanglement in a Quantum Computer** — **Fermilab**
*Fermilab theory seminars. Virtual (*)* — *Jun 15, 2021*

**The Meta-Variational Quantum Eigensolver** — **Oxford**
*Oxford Quantum Information Society. Virtual (*)* — *May 20, 2021*

**The Meta-Variational Quantum Eigensolver** — **Scientific Machine Learning Webinars**
*Virtual.* — *May 6, 2021*

**Noisy Intermediate-Scale Quantum algorithms** — **Alexandria University**
*Hypatia Series. Virtual(*).* — *Apr 8, 2021*

**Maximal Entanglement in High Energy Physics** — **University of Maryland**
*Nuclear Theory series. Virtual(*).* — *Apr 2, 2021*

**Noisy Intermediate-Scale Quantum algorithms** — **Académie Royale de Belgique**
*Belgian Quantum Physics Initiative. Virtual(*).* — *Mar 4, 2021*

**Designing VQA with Tequila** — **Quantum Conversations by the Bay**
*Virtual.* — *Nov 28, 2020*

**Maximal Entanglement. Applications to Quantum Computation and Particle Physics** — **UofT**
*Matterlab group meeting. Toronto (Canada).* — *Mar 1, 2029*

# Panels and round tables

## As a moderator

**Round table Industrial forum**                                   **Quantum Matter 2023**
*Participants: Marta Estarellas, Richard Kienhoefer, Pascale Senellart,*                   *May 24, 2023*
*Fernando de la Iglesia and Bilal Kalyoncu*

**Round table Industrial forum**                                   **Quantum Matter 2022**
*Participants: Marc Almendros, Niels Bultink, Gianni del Bimbo, Daniel Szombati,*          *Jun 22, 2022*
*Yonatan Cohen, Josep M. Martorell, Heike Riel and Carmen Palacios.*

## As a participant

**Quantum computing + Communications: meet at the halfway.**                   **PuzzleX**
*Pannel with Hugues de Riedmatten.*                                  *Oct 7, 2022*
Modarated by Carmen G. Almudéver.

**Catalan Nanotech Ecosystem Session**                                   **ACM Nanocomm**
*Modarated by Stephan Roche.*                                       *Oct 7, 2022*

**Women in ACM/IEEE WICE Luncheon**                                   **ACM Nanocomm**
*Modarated by Núria Castell.*                                       *Oct 6, 2022*

**Quantum Computing: Changing the Course of Industry**            **Barcelona New Economy Week**
*Round table with Carlos Kuchkovsky, Marta Pita, and Enrique Sanchez.*              *Oct 3, 2022*
Modarated by Jaime Gómez.

**Quantum Technologies**                                   **Barcelona Deep Tech Summit**
*Panel with Silvia Carrasco, Carlos Abellán and Enrique Mora.*                  *Sep 22, 2022*
Moderated by Rubén Criado

**The Impact of Advanced Computing in AI**                                   **Science|Business**
*Round table with Jean Pierre Panziera and Nicolas Moes.*                   *Sep 19 2022*
Moderated by David Pringle

**The Future of HPC**                                   **ACM Europe Summer School**
*Panel with Paul Messina, Per Stenström, Uri Weiser and Min Li.*                  *Sep 2 2022*
Moderated by Josephine Wood

**Young People Program Career Panel**                                   **DATE 2022**
                                                                   *Mar 21 2022*

**Quantum Software Ecosystem**                                   **IEEE Services**
*Pannel discussion with industry and academic members*                   *Sep 9 2021*

# Committees

## National

**Vice-president**                                   **Real Sociedad Española de Física**
*Grupo Especializado en Información y Tecnologías Cuánticas (GEITC).*              *2023 - Present*

## European

**Quantum Computing working group**                   **European Quantum Flagship and EuroHPC**
*Quantum Coordination Board*                                       *2023 - Present*

**Quantum Standarization working group**            **European Quantum Flagship and EuroHPC**
*Quantum Coordination Board*                                       *2023 - Present*

**Quantum - HPC Working group**                                   **European Quantum Flagship**
                                                                   *2022 - Present*

## Scientific Advisory Board

**Finish Quantum Initiative**                                   **CSC, Aalto University, VTT**
                                                                   *2023 - Present*

**Consell de les Tecnologies Quàntiques de Catalunya**                    **Generalitat de Catalunya**
*Board member*                                                                  *2022 – 2024*

### Scientific Committee

Quantum Techniques in Machine Learning 2023, CERN.

ICE8 2023, Santiago de Compostela.

Quantum Matter 2023, Madrid.

Quantum Matter 2022, Barcelona.

Quantum Techniques in Machine Learning 2020, Virtual.

### PhD Thesis committees

**Memory Management in Software Quantum Computing Simulators**          **U. Industrial de Santander**
*Gilberto Díaz*                                                                    *Dec 9, 2024*
Supervisors: C. Jaime Barrios Hernández, L. Angelo Steffenel, J. F. Couturier

**Quantum many-body ground states via digital quantum simulation**          **Universidade do Minho**
*Bruno Rodrigues Pacheco e Murta*                                                    *Feb 29, 2024*
Supervisors: Joaquín Fernández-Rossier, Nuno Miguel Machado Reis Peres

**Reservoir Computing in Quantum Systems**                          **Universitat de les Illes Balears**
*Rodrigo Martínez Peña*                                                              *Sep 7, 2023*
Supervisor: Roberta Zambrini, Miguel Cornelles Soriano

**Fault tolerant quantum algorithms**                          **Universidad Complutense de Madrid**
*Pablo Moreno-Casares*                                                              *Jan 17, 2023*
Supervisor: Miguel Ángel Martín-Delgado

**Quantum information in lattices**                          **Universitat Autònoma de Barcelona**
*Bruna Gabrielly De Moraes Araújo*                                                    *Jul 22, 2022*
Supervisors: Antonio Acín dal Maschio, Daniel Cavalcanti Santos and Stephan Jean Louis Roche

## Conference and seminars organization

**Spring School on Near-Term Quantum Computing**                          **Benasque, Spain.**
*Co-organizer. Centro de Ciencias de Benasque Pedro Pascual.*                    *Apr 14-27, 2024*

**Quantum Matter International Conference**                                            **Madrid**
*Industrial forum co-organizer.*                                                    *May 22-25, 2023*

**Quantum Research Seminars Toronto.**                                              **Virtual**
*Co-organizer and chair. Youtube: Quantum Research Seminars Toronto.*                *2020 – 2021*

## Teaching

### Lectures and courses

**A gentle introduction to quantum computing**                          **ACM Europe, Barcelona**
*ACM Europe Summer School on HPC*                                                    *July 7, 2023*
The quest for the quantum computer
**A gentle introduction to quantum computing**                          **ACM Europe, Barcelona**
*ACM Europe Summer School on HPC*                                                    *July 7, 2023*

**Quantum Algorithms I and II**                          **Centro de Ciencias de Benasque Pedro Pascual**
*Spring School on Superconducting Qubit Technology*                                  *Apr 11-21, 2023*

**The Noisy Intermediate Scale Quantum Computation**          **Universidad Complutense de Madrid**
*Escenarios Científicos*                                                              *Mar 14, 2023*

**The Noisy Intermediate Scale Quantum Computation**          **Universitat Autònoma de Barcelona**
*Master Modelling for Science and Engineering Research and Innovation*                *Oct 4, 2022*

**Variational Quantum Computing**                          **Universidad Internacional Menéndez-Pelayo**
*IV Summer School on Quantum Computing*                                              *Sep 5-9, 2022*

**Near-term quantum computing**     **Universidad Castilla La-Mancha**
*Clase introducción al curso en Quantum Computing software.*     *Jun 20, 2022*

**NISQ computing**     **Institut de Ciències Fotòniques (ICFO)**
*Theory lectures*     *Mar 15-24, 2022*

**Variational Quantum Computing**     **Universidad Internacional Menéndez-Pelayo**
*III Summer School on Quantum and Q-Inspired Computing*     *Sep 7, 2021*

**Noisy Intermediate-Scale Quantum Algorithms**     **Warsaw, Poland**
*Summer School "Machine Learning in Quantum Physics and Chemistry"*     *Aug 25, 2021*

**Quantum Computing in the NISQ era**     **UCL**
*Talk in Quantum Technologies Winter School*     *Dec 10, 2020*

**Bojos per la Supercomputació**     **BSC**
*Introductory course in quantum computation for high-school students*     *26 Apr – 04 May, 2019*

***The Quantum Revolution***     **ESADE Business School**
*Seminar at Master in Finance*     *Jun 07, 2018*

### Teaching positions

**Teacher Assistant**     **Universitat Autònoma de Barcelona**
*Calculus I-II, Theoretical Mechanics, Physics I - II.*     *2017 – 2019*

**Teacher Assistant**     **Universitat de Barcelona**
*Modern Physics Laboratory, Computational Physics.*     *2016 – 2017*

## Students

### PhD

**Francesco Aldo Venturelli**     **Universitat Pompeu Fabra**
*Co-supervised with Miguel Ángel González Ballester*     *Nov 2024 – Present*

**Berta Casas Font**     **University of Barcelona**
*Co-supervised with Artur Garcia*     *Sep 2022 – Present*

### Master

**Juan Francisco Martín Bravo**     **University of Barcelona**
*Quantum benchmarking: entanglement measures in a quantum computer*     *Feb 2023 – Jul 2023*
Master Quantum Science and Technology.

**Berta Casas Font**     **University of Barcelona**
*Quantum function fitting and classification beyond the single-qubit model*     *Feb 2022 – Jul 2022*
Master Quantum Science and Technology.

### Internships

**Francesc Sabater Garcia**     **University of Barcelona**
*Adding Qibo as a Supported Framework for Mitiq*     *Sep 2023 – Feb 2024*
Master Quantum Science and Technology.

### Undergraduate (degree)

**Marc Farreras**     **University of Barcelona**
*Exact XY model simulation with a quantum computer*     *Feb 2023 – Jul 2023*
Physics Degree

**Alex Alemany**     **Universitat Politècnica de Catalunya**
*The HHL algorithm*     *Feb 2023 – Jul 2023*
Computer Science Degree. Co-supervised with Jordi Delgado.

**Júlia Barberà Rodríguez**     **University of Barcelona**
*Application of Grover's quantum algorithm for string matching*     *Feb 2022 – Jul 2022*
Physics Degree

**Elies M. Gil Fuster**
*Variational Quantum Classifier*
Physics Degree. Co-supervised with J. I. Latorre.

**University of Barcelona**
*Feb 2019 – Jul 2019*

## Outreach

Some of my talks and events videos are listed in my Youtube Channel playlists.

### Articles

**Supercomputación y computación cuántica:**
**el camino hacia la integracción**
*Revista Española de Física 38 (2), 37-41*

**Revista Española de Física**
*Mar 2024*

**L'ordinador quàntic: un camí de ciència, tecnologia i sobirania**
*Revista IDEES núm. 61 "Quantum: una revolució que canviarà el món?".*
Translated to Spanish, English and Catalan.

**Revista IDEES**
*Feb 2024*

**Computación Cuántica en la Nube**
*Revista Española de Física 34 (1), 25-29.*
.

**Revista Española de Física**
*Mar 2020*

**How I became a quantum computation scientist**
*Medium article for @qiskit*

*Jul 2018*

**Contributing Writer**
*Medium articles, @quantum_wa.*

**Quantum World Association**
*2018 – 2019*

### Commissary

**City and Science Biennal**
*With Toni Pou and Teresa Badia.*

**Ajuntament de Barcelona**
*2025*

### Panels and round tables

**Talent Arena MWC**
*Conversation with Antonio Acín*

**Barcelona**
*Mar 5, 2025*

**Jornades REACT**
*Round table with Teresa Riesgo Alcaide, Laia Bonet, Xavier Azemar Mallard Mateo Valero Cortes.*
Moderated by Elena Arrieta Palacio.

**Barcelona**
*Mar 29, 2023*

**Premios Nacionales de Investigación**
*Presenter and moderator of the act.*
Chaired by HRH King and Queen of Spain, Spanish Minister of Science and Universities and Barcelona Mayor.

**Barcelona**
*May 5, 2022*

**Mujeres y Digitalización: Por una España Igualitaria**
*Round table with Marta Villegas, Lucía Flecha and Susana Fernández.*
Moderated by the Secretary of State of Digitalization and AI Carme Artigas.

**MINECO**
*Mar 8, 2022*

**Dia Internacional Dona i Nena a la ciència**
*Event with Barcelona city Mayor and government.*

**Ajuntament de Barcelona**
*Feb 11, 2022*

**Women in Physics path**
*Organized by the Equality commission from the Physics Faculty*

**Universitat de Barcelona**
*Mar 3 2021*

### Keynote speech

**Bojos de la Ciència**
*Speech about Bojos per la Supercomputació program*

**Fundació Catalunya-La Pedrera**
*Dec 10 2018*

**Bojos de la Ciència**
*Speech at Master grants act*

**Fundació Catalunya-La Pedrera**
*Oct 16 2018*

### Talks and courses

***Computació quàntica: passat, present i futur d'una (r)evolució tecnològica***
*Mobile World Congress*

**Beat Barcelona**
*Mar 6, 2025*

***Quantum computers: the new supercomputer partition***
*Mobile World Congress*

**BSC Booth.**
*Mar 6, 2025*

**Computación cuántica: pasado, presente y futuro de una (r)evolución tecnológica**  **Burgos, Spain.**
*Casa del Cordón*  *Feb 27, 2025*

**Computació quàntica: passat, present i futur d'una (r)evolució tecnològica**  **Universitat de Girona**
*Cicle Últimes fronteres: la ciència del segle XXI*  *May 4, 2023*

**Computación cuántica: presente y futuro de una revolución tecn.**  **Uni. Las Palmas de Gran Canaria**
*Jornada tecnología.*  *Apr 18, 2023*

**Computació Quàntica i els reptes de Talent TIC en els propers anys**  **Lul·liana**
*Col·legi d'Informàtica de Catalunya*  *Nov 24, 2022*

**Tecnologies quàntiques: present i futur d'una (r)evolució tecnológica**  **Jornades Feministes**
*Casal de Joves Sant Just Desvern*  *Nov 20, 2022*

**Present i futur de les tecnologies quàntiques**  **A-12 Estudis i Recerca Universitaria**
*Two-day introductory course for senior citizens.*  *Oct 20-26, 2022*

**Computació quàntica: present i futur d'una revolució tecnològica**  **Open Day TIC**
*Universitat Politècnica de Catalunya.*  *May 12, 2022*

**Tecnologías Cuánticas: presente y futuro**  **Pint of Science**
*Barcelona.*  *May 11, 2022*

**Quantum Spain: un impulso para el ecosistema de computación cuántica**  **CTA**
*Seminar for the Corporación Tecnológica de Andalucía. Virtual.*  *Apr 26, 2022*

**Supercomputación y Quantum Spain**  **PTE Disruptive**
*Seminar for the Plataforma Tecnológica Española y de Tecnologías Disruptivas. Virtual.*  *Mar 22, 2022*

**Tecnologías cuánticas: presente y futuro**  **Col·legi de Biòlegs de Catalunya**
*Virtual.*  *Mar 16, 2022*

**Computación Cuántica**  **Live Talks Cosmocaixa**
*Cosmocaixa (Barcelona)*  *Feb 16, 2022*

**Quantum Spain**  **Meet-up**
*Quantum Barcelona and Madrid meet-up.*  *Dec 13, 2021/Feb 9, 2022*

**Quantum Calling**  **K-W Quantum Enthusiasts Meetup**
*Waterloo Quantum Meet-up*  *Jun 18, 2020*

**Quantica**  **CCCB**
*Quantum computing talk and participation in the exhibition (video)*  *Apr 10-Sep 26, 2019*

**De las computadoras a los ordenadores**  **Margarita Salas Honoris Causa PhD event**
*Badajoz, Spain*  *Feb 26, 2019*

**Technology to manipulate Nature**  **El País con tu Futuro**
*Madrid, Spain*  *Dec 18, 2018*

**Quantum Computation: a new paradigm**  **TEDx talk**
*Sant Feliu de Llobregat, Barcelona, Spain*  *Sep 15, 2018*

**Quantum Computation**  **Cosmocaixa (Science Museum)**
*Researcher's Night 2018*  *Sep 28, 2018*

## Mentorship programs

**Quantum Open Source Foundation mentorship program**  **QOSF**
*Mentor*  *Sep 2020 – Jan 2021*

**Girls E-Mentorship program**  **GEM**
*Mentor*  *Sep 2020 – June 2021*