

PABLO RODENAS RUIZ

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EDUCATION

- PhD in Mathematics**, Imperial College London Oct 2026 – Current
- MSc Quantum Science and Engineering**, École Polytechnique Fédérale de Lausanne (EPFL) Sep 2023 – Mar 2026
- Final GPA: 5.69 out of 6. Specialization in Quantum Information and Computation.
- BSc Physics**, University of Valencia (UV) Sep 2019 – Jun 2023
- GPA: 9.42 out of 10. 18 distinctions of “Matrícula de Honor” (top 5% of the class).
- BSc Physics (Exchange)**, Imperial College London Oct 2022 – Jun 2023
- Awarded First Class Honours.

RESEARCH EXPERIENCE

- Master’s Thesis**, Department of Chemistry, Harvard University Oct 2025 – Mar 2026
- Developed quantum algorithms to solve the coupled-cluster energy and amplitude equations more efficiently, leveraging the Quantum Singular Value Transform (QSVT) framework for solving non-linear equations on quantum computers.
- Research Intern**, Advanced Research Department, Qubit Pharmaceuticals Mar 2025 – Jul 2025
- Devised new quantum circuits for the Metropolis-Hastings quantum walk that achieve a provable quadratic speed-up with constant ancilla usage. Implemented the simulation and verification pipeline for the circuits.
- Semester Project**, Computational Quantum Science Lab, EPFL Sep 2024 – Jan 2025
- Investigated the integration of circuit knitting techniques with tensor-network methods (MPS/MPO) to simulate strongly correlated quantum systems.
- Summer Research Intern**, Quantum Information and Computation Lab, EPFL Jul 2024 – Aug 2024
- Developed Gaussian-process models to classify Wigner negativity in continuous-variable quantum states, achieving up to 95% accuracy on cat and coherent states.

PUBLICATIONS

- Rodenas-Ruiz, P.**, Zhao, A., Lee, J. (2026). *Quantum Solvers for Nonlinear Matrix Equations in Quantum Chemistry*. arXiv preprint (quant-ph, physics.chem-ph). [[arXiv pre-print](#)]
- Claudon, B., **Rodenas-Ruiz, P.**, Piquemal, J.-P., Monmarché, P. (2026). *Quantum Circuits for the Metropolis-Hastings Algorithm*. Journal of Physics A: Mathematical and Theoretical. [[DOI](#)]
- Céspedes-Sarrias, B.[†], Collado-Capell, C.[†], **Rodenas-Ruiz, P.[†]**, Hrynenko, O., Cavallaro, A. (2025). *MM-HSD: Multi-Modal Hate Speech Detection in Videos*. Proceedings of the 33rd ACM International Conference on Multimedia. [[DOI](#)]
- Rodenas-Ruiz, P.[†]**, Saadat, A.[†], Tran, T. T.[†], Müller Smedt, O.[†], Zhang, P., Fellay, J. (2025). *Benchmarking Fine-Tuned RNA Language Models for Intronic Branch Point Prediction*. ICLR 2025 MLGenX Workshop (Tiny Papers track). [[OpenReview](#)]

[†] Equal contribution.

AWARDS

- La Caixa Foundation Fellowship**: Merit-based postgraduate fellowship funding MSc studies abroad. Sep 2023 – Apr 2026
- EPFL Master Excellence Fellowship**: Highly selective fellowship funding MSc studies at EPFL, awarded for undergraduate academic excellence. Declined in favour of the La Caixa Fellowship. Jun 2023 – Apr 2026
- Travel Grant, NYU Abu Dhabi Quantum Hackathon**: Awarded by EPFL’s Quantum Science and Engineering Center to two EPFL students. Apr 2024
- Research Collaboration Grant**: Spanish Ministry of Education scholarship to fund undergraduate research. Sep 2022 – Aug 2023
- Top 25 in University Entrance Exams**: Ranked in the top 25 of ~6000 candidates (top 0.5%), with a score of 13.74/14. Jun 2019

SKILLS

- Programming**: Python (Qiskit, PyTorch, QuTiP), Julia (ITensor), MATLAB, Mathematica
- Tools**: LaTeX, Git, Notion
- Languages**: Spanish (native), English (fluent, TOEFL 109), Catalan (full professional), French (basic)