EDOARDO PEDICILLO

PhD Candidate in Physics

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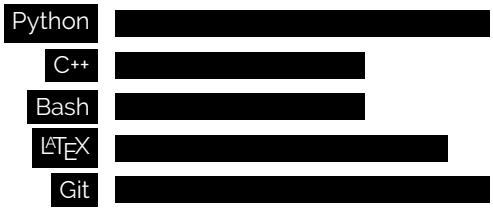
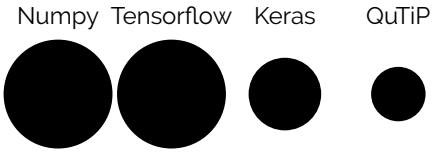
WHO AM I?

I am a physicist and PhD candidate at the University of Milan, focusing on quantum computing and hardware calibration. My work includes developing open-source tools like Qibocal and Qibolab to make quantum hardware calibration more accessible. Outside of research, I enjoy optimizing my computing setup with tools like Neovim and tmux, fine-tuning configurations for a better experience and a smoother workflow.





EXPERIENCE

2023 – present **Associate Researcher** — **Technology Innovation Institute**
Contributing to quantum hardware calibration research and software development, including tools like Qibocal and Qibolab for quantum systems.

EDUCATION

2022 – present **PhD Candidate in Physics** — **University of Milan**
Working on open-source quantum computing tools, focusing on superconducting chip calibration and quantum system software.

2020 – 2022 **Master of Science in Physics** — **University of Milan**
Advanced studies in theoretical and computational high energy physics. Grade 110/110 cum laude.

2017 – 2020 **Bachelor of Science in Physics** — **University of Milan**
Grade 110/110

PROJECTS

Qibo
an open-source full stack API for quantum simulation and quantum hardware control.

Qibocal
software providing Quantum Characterization Validation and Verification protocols.

Qibolab
the dedicated Qibo backend for the automatic deployment of quantum circuits on quantum hardware.

Boostvqe
Boosting variational eigenstate preparation algorithms by double-bracket iteration.

PARTICIPATION IN EVENTS

July 2023 **Summer School** — **University of Trento, IT**
Summer school on Mathematical foundations of Quantum Machine Learning.

November 2023 **QTML** — **CERN, Geneva, CH**
Quantum Techniques in Machine Learning.

January 2024 **QIP** — **Taipei, TW**
Quantum Information Process.

March 2024	**March meeting** 2024 APS March meeting.	**Minneapolis, MN**
May 2024	**ACAT24** 22nd International Workshop on Advanced Computing and Analysis Techniques in Physics Research.	**Stony Brook, NY**
June 2024	**WQS24** Workshop on Quantum Software.	**Copenhagen, DK**
January 2025	**Quantum Technology Symposium.**	**Abu Dhabi, UAE**

PUBLICATIONS

Articles

[1] Stavros Efthymiou et al. "Qibolab: an open-source hybrid quantum operating system". In: *Quantum* 8 (Feb. 2024), p. 1247. ISSN: 2521-327X. DOI: 10.22331/q-2024-02-12-1247. URL: http://dx.doi.org/10.22331/q-2024-02-12-1247.

[2] Andrea Pasquale et al. *Qibocal: an open-source framework for calibration of self-hosted quantum devices*. 2024. arXiv: 2410.00101 [quant-ph]. URL: https://arxiv.org/abs/2410.00101.

[3] Matteo Robbiati et al. *Double-bracket quantum algorithms for high-fidelity ground state preparation*. 2024. arXiv: 2408.03987 [quant-ph]. URL: https://arxiv.org/abs/2408.03987.

Proceedings

[1] Andrea Pasquale et al. *Beyond full statevector simulation with Qibo*. 2024. arXiv: 2408.00384 [quant-ph]. URL: https://arxiv.org/abs/2408.00384.

[2] Edoardo Pedicillo, Andrea Pasquale, and Stefano Carrazza. *Benchmarking machine learning models for quantum state classification*. 2023. arXiv: 2309.07679 [quant-ph]. URL: https://arxiv.org/abs/2309.07679.

[3] Edoardo Pedicillo et al. *An open-source framework for quantum hardware control*. 2024. arXiv: 2407.21737 [quant-ph]. URL: https://arxiv.org/abs/2407.21737.

[4] Li Xiaoyue et al. *Strategies for optimizing double-bracket quantum algorithms*. 2024. arXiv: 2408.07431 [quant-ph]. URL: https://arxiv.org/abs/2408.07431.

LANGUAGES

Italian - Native
English - Fluent
German - Intermediate

HOBBIES

Exploring advanced tools for computing, from Neovim to tmux, and optimizing my working environment for maximum productivity.

NON PROFIT

Contributing to open-source quantum computing tools and research to make quantum technologies more accessible.