

Franz J. Schreiber

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RESEARCH EXPERIENCE

- PhD Student**, Freie Universität Berlin 2023–present
Advisor: Jens Eisert
– Topic: Algorithms and Computational Resource Requirements in Quantum Information Theory
- Research Intern**, Dahlem Center for Complex Quantum Systems 2022
Mentor: Jens Eisert
– Topic: Investigation of Variational Quantum Learning Models and their Classical Descriptions
- Research Intern**, Freie Universität Berlin 2021
Mentor: Frank Noé
– Topic: Application of Machine Learning to Coarse-Graining in Molecular Dynamics Simulations
- Research Intern**, Freie Universität Berlin 2021
Mentor: Bettina Keller
– Topic: Investigation of Path Ensembles for Langevin Integrators
- Research Intern**, Siemens 2020
Mentor: Holger Schererz
– Topic: Optimization Methods in Complex Networks

PUBLICATIONS

- [1] P. Rodriguez-Grasa, M. C. Caro, J. Eisert, E. Gil-Fuster, **F. J. Schreiber**, and C. Bravo-Prieto, “A pac-bayesian approach to generalization for quantum models”, *arXiv preprint arXiv:2603.22964*, 2026.
- [2] **F. J. Schreiber**, J. Eisert, and J. J. Meyer, “Tomography of parametrized quantum states”, *PRX Quantum*, vol. 6, p. 020 346, 2 Jun. 2025.
- [3] **F. J. Schreiber**, M. J. Kramer, A. Nietner, and J. Eisert, “A measurement-driven quantum algorithm for sat: Performance guarantees via spectral gaps and measurement parallelization”, *arXiv preprint arXiv:2511.09647*, 2025.
- [4] E. Recio-Armengol, **F. J. Schreiber**, J. Eisert, and C. Bravo-Prieto, “Learning complexity gradually in quantum machine learning models”, *arXiv preprint arXiv:2411.11954*, 2024.
- [5] **F. J. Schreiber**, J. Eisert, and J. J. Meyer, “Classical surrogates for quantum learning models”, *Physical Review Letters*, vol. 131, no. 10, p. 100 803, 2023.

EDUCATION

- Freie Universität Berlin** 2020-2022
M. Sc. in Computational Sciences, Grade: **1.0** (highest possible)
– Advisor: Jens Eisert
– Thesis: “Efficient Classical Representation of Parametrized Quantum States”

Freie Universität Berlin

2016-2020

Studies in Mathematics and Chemistry, B.Sc. in Chemistry, Grade: **1.9**

- Advisor: Bettina Keller
- Thesis: “Calculation of Partition Coefficients with Molecular Dynamics Simulations”

Hermann-Billing-Gymnasium

2008-2016

Abitur (general qualification for university entrance), Grade: **1.0** (highest possible)

- Graduated top of class

HONORS AND AWARDS

Quantum Futur Award 2023, Finalist

- National award by the German Federal Ministry of Education and Research recognizing outstanding Master’s theses in quantum technology; selected as one of 5 finalists

TEACHING EXPERIENCE

Teaching assistant for “Mathematics I/II for Chemists and Biochemists”, 2019-2022

Teaching assistant for “Atomic- and Molecular Physics”, 2024

PROFESSIONAL ACTIVITIES

Journal Reviewer: PRX Quantum

Conference Subreviewer: QIP 2024, QTML 2025, QCTiP 2025

Co-supervision of Master’s thesis: “On Quantum Algorithms for Optimization: Expected Speed-Ups and Applications” by Elizaveta Patutkina, 2025

SELECTED PRESENTATIONS

“Classical surrogates for quantum learning models”, QTML 2022 (extended talk)

“Tomography of Parametrized Quantum States”, HQCC Meeting 2024 (contributed talk)

“A measurement-driven quantum algorithm for SAT: Performance guarantees via spectral gaps and measurement parallelization”, QCTiP 2025 (Poster)