

Francesco Battistel

Curriculum vitae

✉ battistel.fra@protonmail.com
🌐 <https://francescobattistel.info>



Personal Information

Date of Birth 1993

Nationality Italian

Education

2017–2021 **PhD Student in Quantum Computing Theory.**

QuTech, Delft University of Technology, Delft, Netherlands

○ Supervisor: Barbara Terhal.

2015–2017 **Elite Master Program in Mathematical and Theoretical Physics.**

LMU & TUM, Munich, Germany

○ Thesis: *General Quantum Error Correction for MERA Codes.*

Supervisor: Robert König.

2012–2015 **Bachelor Degree in Physics.**

Department of Physics, Università degli Studi di Trieste, Trieste, Italy

○ Thesis: *Black Hole Entropy and Thermodynamics.*

Supervisor: Stefano Ansoldi.

Publications

- J. F. Marques, B. M. Varbanov, M. S. Moreira, H. Ali, N. Muthusubramanian, C. Zachariadis, F. Battistel, M. Beekman, N. Haider, W. Vlothuizen, A. Bruno, B. M. Terhal, L. DiCarlo. *Logical-qubit operations in an error-detecting surface code.* arXiv:2102.13071 (2021).
- F. Battistel, B. M. Varbanov, B. M. Terhal. *A hardware-efficient leakage-reduction scheme for quantum error correction with superconducting transmon qubits.* arXiv:2102.08336 (2021).
- V. Negîrneac, H. Ali, N. Muthusubramanian, F. Battistel, R. Sagastizabal, M. S. Moreira, J. F. Marques, W. Vlothuizen, M. Beekman, N. Haider, A. Bruno, L. DiCarlo. *High-fidelity controlled-Z gate with maximal intermediate leakage operating at the speed limit in a superconducting quantum processor.* arXiv:2008.07411 (2020).

- B. M. Varbanov, F. Battistel, B. M. Tarasinski, V. P. Ostroukh, T. E. O'Brien, L. DiCarlo, B. M. Terhal. *Leakage detection for a transmon-based surface code*. Nature Partner Journal Quantum Information 10.1038/s41534-020-00330-w (2020).
- J. Helsen, F. Battistel, B.M. Terhal. *Spectral Quantum Tomography*. Nature Partner Journal Quantum Information 10.1038/s41534-019-0189-0 (2019).
- M. A. Rol, F. Battistel, F. K. Malinowski, C. C. Bultink, B. M. Tarasinski, R. Vollmer, N. Haider, N. Muthusubramanian, A. Bruno, B. M. Terhal, L. DiCarlo. *Fast, High-Fidelity Conditional-Phase Gate Exploiting Leakage Interference in Weakly Anharmonic Superconducting Qubits*. 10.1103/PhysRevLett.123.1205022 (2019).

Schools & Conferences

- 02-06 Mar '20 **APS March Meeting 2020**.
Denver, Colorado, USA
- 16-18 Sep '19 **Netherlands-Japan Quantum Conference**.
Delft University of Technology, Delft, Netherlands
- 04-08 Mar '19 **APS March Meeting 2019**.
Boston, Massachusetts, USA
- 24-13 Jun '18 **Quantum Science: Implementations**.
Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain
- 13-19 Jan '18 **QIP2018**.
Delft University of Technology, Delft, Netherlands
- 11-15 Sep '17 **Qec17**.
University of Maryland, College Park, Maryland, USA
- 28-06 Jun '17 **16th Canadian Summer School on Quantum Information**.
University of Sherbrooke, Quebec, Canada
- 29-31 Mar '17 **IMPRS-TopMath Spring School on "Quantum Entropy and its Use"**.
TUM, Bavaria, Germany
- 8-12 Aug '16 **26th Jyväskylä Summer School**.
Jyväskylän Yliopisto, Jyväskylä, Finland

Experience

- 2020 **Teaching Assistant for the Master course "Quantum Hardware"**.
Delft University of Technology, Delft, Netherlands
- 2018, 2019, 2020 **Teaching Assistant for the Master course "Special Topics in Quantum Technology: Superconducting qubits" / "Modelling of Superconducting Quantum Devices"**.
Delft University of Technology, Delft, Netherlands
- Oct-Feb 2017 **Tutor for the Bachelor Course "T0: Rechenmethoden"**.

LMU, München, Germany

Sept–Oct 2014 **Internship: Ultra-High Vacuum Technologies and Scanning Tunneling Microscopy.**

TASC-INFM National laboratory, Area Science Park, Basovizza, Trieste, Italy

July 2014 **Internship: Statistical Study of the Dutch Energy Market for Greenhouses.**

Kwekerij De Kabel, Delft, Netherlands

Articles published after the intership:

F. Battistel, P. Battistel, *Efficienza e risparmio energetico in Olanda con la cogenerazione*, (Efficiency and Energetic Saving in the Netherlands with Cogeneration), *Terra e Vita*, 36/2014:8-11

F. Battistel, P. Battistel, *Olanda, risparmiare energia. Questo è il problema*, (Netherlands, Saving Energy. This is the Problem), *Terra e Vita*, 37/2014:46-50

Scholarships

2012-2015 **Collegio per le Scienze “Luciano Fonda”**, Trieste, Italy.

Spoken Languages

Italian Mother tongue.

English Level C1. TOEFL iBT: 102/120.

Dutch Level B1.

German Level A1.

Computer Skills

Languages Python, Fortran, Mathematica, IDL (Interactive Data Language)

Data Analysis Root

Certificates ECDL (European Computer Driving License)

Soft Skills

- Communicational and organizational abilities developed doing voluntary work as an educator for children.
- Practical skills acquired travelling a lot through Europe, Africa and North America.

Additional Information

Scores **GRE (Graduate Record Examinations)**, Physics Subject Test, Score: 990/990.

Awards **Olympics of Chemistry**, 5th in the Italian National Final 2012, category B.