

Alessandro Marcomini

MSc in Physics of Data
University of Padova

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*I am a 23 years old graduate student of Physics of Data
with great interest in data analysis, machine learning,
and quantum technologies.
I believe in the power of communication, that curiosity is
the highway to the future and that laziness is the
strongest engine of human kind.*

Education

- 2020–present **Master's Degree in Physics of Data**, *University of Padova*
GPA - 3.92/4.00
- 2017–2020 **Bachelor's Degree in Physics**, *University of Padova*
GPA - 3.71/4.00
- 2017–2022 **University College of Merit**, *Collegio Don Nicola Mazza*
Head of students' council, communication manager, over 600 hours of extra-academic activities including seminars, courses and non-formal education.
- 2012–2017 **Scientific High School Diploma**, *Liceo G. Galilei*, Belluno (BL)
Final evaluation: 100/100

Experience

Internships

- 2022–present **Assistant Student - Quantum Optimal Control**, *Forschungszentrum Jülich*
I am working in the PGI-8 institute supervised by Prof. Tommaso Calarco. Goals:
- Design efficient tools for optimal control of two-qubit gates for quantum computing
 - Numerical simulations of dCRAB optimization in NV-centers in diamonds
- Summer **Visiting Student - Ultracold atoms in optical traps**, *IAP, Bonn University*
- 2021 I worked in the group of Prof. Dieter Meschede. Achievements:
- Tuned experimental set-up to trap atoms in 3D optical lattices
 - Enhanced laser beams performances via optical path alignment
- 2020 **Bachelor's Thesis - Hacking the implementation of QKD**, *LUXOR laboratories, University of Padova*
I worked in the group of Prof. Paolo Villorresi. Achievements:
- Review quantum attacks on both ends of quantum key distribution systems
 - Proposed quantitative countermeasures to enhance security of POGNAC devices

2020-2021 **Innovation Experience - Contamination Lab**, *Collegio Don Nicola Mazza*
I took part in an educational program about the world of start-ups and entrepreneurship

Work Experience

2021 **Business Design innovator**, *MED Health Technologies*, Maserà, PD, Italy
2019–2020 **Mathematics TA**, *Collegio Don Nicola Mazza*, Padova, PD, Italy
2018–2020 **Audio-Video technician**, *Collegio Don Nicola Mazza*, Padova, PD, Italy
2018–2019 **Librarian**, *University of Padova*, Padova, PD, Italy
2016–2018 **Volleyball Referee**, *FIPAV Veneto*, Belluno, BL, Italy

Computer Skills

Proficient: Python, R, L^AT_EX, Microsoft Office, **Confident:** Fortran, C++, VHDL, Qiskit,
To be refreshed: Root, Spark, C#, Q#

Languages

Italian (Mother tongue), **English** (IELTS, C1 level, 2021) **French** (DELFI, B1 level, 2018)

Honors and Awards

2021 **Quantum Coalition Hackathon - Winner of Microsoft's challenge**,
Stanford University and Yale University
In team, we developed a quantum game in Q# exploiting Grover's search algorithm
2021 **Qiskit Quantum Summer School - certificate of Quantum Excellence**,
Quantum Machine Learning, IBM Quantum
2021 **Gamification Hackathon - Winning team**, *Collegio Don Nicola Mazza*
We designed a platform to ease university students life following gamification techniques
2022 **European Spring School in Quantum Science and Technology - Selected Participant**, *University of Strasbourg*
2019 **Pan-European Quantum Internet Hackathon - Participant**, CERN

Passions and Interests

- **Internationality:** I took part in five Erasmus+ projects all over Europe and I collaborate as project writer and group leader with a local association
- **Drama:** since 10 years I perform in multiple plays both in Italian and English
- **Sports:** I enjoy all team sports; I used to play football, volleyball and chess
- **Music:** I used to play the piano and I self-taught myself how to play ukulele
- **Disseminations:** I enjoy sharing my knowledge with newbies in events

Community Activities

- **Scout group:** 10 years of activities both as mentee and mentor
- **Environment:** founder member of the informal group "Sustainable Vibes", to favor active youth actions on the topic
- **Volunteering:** member of three no-profit local organizations