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Ugo Nzongani



## EDUCATION

### PhD Candidate in Quantum Computing

2023 - 2026 (Ongoing)

*Aix-Marseille University, ENSTA Paris, Institut Polytechnique de Paris*

Subject: Noisy-assisted quantum circuit, optimisation and fault-tolerance

Supervisors: Prof. Giuseppe Di Molfetta, Prof. Andrea Simonetto

### Master of Quantum and Distributed Computer Science with honours

2021 - 2023

*Paris-Saclay University*

Main courses: Quantum Computing, Quantum Information, High Performance Computing, Distributed Algorithms, Advanced Algorithmic, Optimization, Complexity Theory

### Bachelor of Computer Science with honours

2018 - 2021

*Paris-Saclay University*

Main courses: Functional Programming, Data Structures, Algorithmic, Machine Learning, C/Python/Java/Assembly Programming, Logic

### Baccalauréat Scientifique, equivalent to High School GB A levels with honours

2018

*Fustel de Coulanges high school, Massy*

Main courses: Mathematics, Physics, Biology

## WORK EXPERIENCE

### Volunteering - LOC

April 2023

*Ecole Polytechnique - International Physicists' Tournament*

*Palaiseau - France*

- I participated in the 15th edition of the [IPT](#) as a member of the Local Organizing Committee. This is an international tournament for physics students where so-called “Physics Fight” takes place four days of the week. A fight is a scientific debate between 3 teams around challenge they have been studying for several months.

### Research Internship

5 months - 2023

*Paris-Saclay University - Laboratoire de Méthodes Formelles - [QuaCS](#) Team*

*Orsay - France*

- Subject: Dirac quantum walk on tetrahedra  
Supervisor: Prof. Pablo Arrighi

### Math tutor

7 months - 2023

*Academia*

*Massy - France*

- Private math lessons to high school students

### Research Internship

2 months - 2022

*INRIA - Laboratoire de Méthodes Formelles - [QuaCS](#) Team*

*Orsay - France*

- Subject: Quantum circuits for quantum walk with position-dependent coin operators  
Supervisor: Dr. Pablo Arnault

## PUBLICATIONS

- Zylberman, J., Nzongani, U., Simonetto, A., Debbasch, F. [Efficient Quantum Circuits for Non-Unitary and Unitary Diagonal Operators with Space-Time Accuracy trade-offs](#). ACM Transaction on Quantum Computing (2025).
- Nzongani, U., Eon, N., Márquez-Martín, I. et al. [Dirac quantum walk on tetrahedra](#). Physical Review A 110, 042418 (2024).
- Nzongani, U., Arnault P. [Adjustable-depth quantum circuit for position-dependent coin operators of discrete-time quantum walks](#). Quantum Information Processing 23, 193 (2024).
- Nzongani, U., Zylberman, J., Doncecchi, CE. et al. [Quantum circuits for discrete-time quantum walks with position-dependent coin operator](#). Quantum Information Processing 22, 270 (2023).

## PREPRINTS

- Nzongani, U., Simonetto, A., Di Molfetta, G. [Noisy-enhanced quantum search on complex networks](#).

## TALKS

- Hybrid Quantum Search on Complex Networks: Noisy Spatial Search with Quantum Stochastic Walks, *PGMO DAYS 2024, EDF LAB, Saclay*

## SKILLS

<b>Programming</b>	Python, OCaml, Java, C, C++, Julia, L <sup>A</sup> T <sub>E</sub> X, HTML, CSS, PHP
<b>Communication</b>	French (native), English (885/990 TOEIC)