# Paolo FITTIPALDI

## Quantum Engineer

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## KEY STRENGTHS

Quantum Networks researcher with a background in Engineering and a deep passion for Computer Science. Extensive experience with **analytical modeling** and **numerical simulation** of **quantum networks** acquired through PhD research. Strong **Python** and **C++** coding skills and familiarity with version control systems (**git**) acquired through development of individual and collaborative software projects. Knowledge of **Micro/Nanoelectronics** obtained during MSc, with exposure to **FPGA programming**, hardware description languages (**VHDL**) and microcontroller programming in **C**. Strong project management and typesetting skills developed by writing thesis manuscript in LaTeX. Highly accustomed to working in diverse teams due to international collaborations during MSc and PhD. Fluent in Italian (mother tongue), English and French.

## EDUCATION

**PhD. in Computer Science** — **LIP6, Sorbonne Université**

2021 – 2025 Paris, France

- Thesis title “Dynamic Scheduling through Fiber and Satellite Quantum Repeater Networks”

**M2 Degree in “Quantum Devices”** — **Université Paris Cité**

2020 – 2021 Paris, France

- Internship ”Feasibility Study of a Quantum Repeater Link on the Jussieu Campus” at LIP6, Sorbonne Université
- Grade: Bien

**MSc. Degree ”Nanotechnologies for ICTs”** — **Politecnico di Torino**

2019 – 2021 Torino, Italy

- Grade: 110/110

## PROJECTS

**Dynamic Scheduling in Quantum Repeater Networks** — **Sorbonne Université**

2021-2023 Paris, France

- Extensive research on the **multi-commodity scheduling problem** over quantum repeater networks through **Lyapunov Drift Minimization**;
- Development of an *ad-hoc* **Python simulator**, executed on the laboratory’s **HPC clusters**. Acquired familiarity with Python-based **data visualization tools** to clearly communicate research results.

**Satellite Quantum Communication** — **Sorbonne Université**

2022-2024 Paris, France

- Case study of a **satellite quantum link** between Nice and Paris involving **analytical modeling** and **numerical simulation** (**QuISP**, detailed below) performed in the context of hybrid fiber and free-space quantum networks;
- **Performance analysis** of the link as a function of **low-level physical** and **experimental parameters**, identifying **physical upper bounds** on the performance of the link and key differences with fiber links. Investigation of different quantum **memory allocation strategies**.

**Quantum Internet Simulation Package** — **Sorbonne Université and Keio University**

2022-2025 Paris, France and Fujisawa, Japan

- Implementation of **satellite quantum links** and **connection teardown protocols** in the **Quantum Internet Simulation Package (QuISP)** throughout two research visits to the AQUA team in Keio University, Fujisawa, Japan;
- Built familiarity with the **OMNeT++** platform, the pre-existing **C++** code base and best software development practices by producing contributions spanning five **pull requests**.

## LANGUAGES

**Italian** ●●●●●

**English** ●●●●●

**French** ●●●●○