

FILIPPO MARTINELLI

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EXECUTIVE SUMMARY

- PhD researcher specializing in **integrated photonics for quantum application**.
- 5+ years of work experience in **integrated photonics** and **superconducting single-photon detectors**.
- Experience with **cleanroom nanofabrication** methods, **numerical simulations**, **cryogenic measurements**, and **single-photon detector characterization**.

PROFESSIONAL EXPERIENCE

aQuila Photonics <i>Founder</i>	Singapore May 2025 – On going
• Commercialization of waveguide-integrated Superconducting Nanowire Single-Photon Detectors (SNSPDs).	

Nanyang Technological University <i>PhD Candidate & Researcher</i>	Singapore Jan 2021 – On going
• Developing waveguide-integrated Superconducting Nanowire Single-Photon Detectors (SNSPDs). • Simulated integrated photonic circuit components using Lumerical FDTD, Lumerical EME and Python. • Developed the full fabrication workflow for waveguide integrated SNSPDs. • Built custom-made setups for optical and electrical characterization of integrated photonic components in a cryogenic environment at a temperature below 4 K. • Designed three tapeouts for silicon nitride photonic circuit fabrication at Cornerstone and Ligentec foundries. • Authored 3 publications and 2 patents. Delivered seminars to 10+ international conferences. • Supervised 5 student in their final thesis project. • Raised SGD 250,000 for the development of a commercial prototype of single-photon detectors.	
<i>Teaching Assistant</i> • Prepared classes and provided written feedback to 200+ undergraduate students. • Received an evaluation rating of 4.5 out of 5 across 4 courses.	

Nu Quantum LTD <i>Engineering Intern</i>	Cambridge, UK May 2023 – Aug 2023
• Worked in a 5-people team for the development of a photonic integrated chip for entanglement distribution of ion qubits. • Numerically optimized absorption performances of LiNbO3 integrated SNSPDs with aid of Lumerical MODE and Phyton. • Designed and installed cryogenic RF lines in an existing cryostat for SNSPDs electrical characterization at a temperature of 1.8 K. Characterized SNSPDs electrical performances. • Delivered a company-wide seminar on superconducting single-photon detectors.	

EDUCATION

PhD, Physics - Nanyang Technological University	Singapore , Jan 2021 – June 2026
M.Sc., Engineering Physics (with honors) - Politecnico di Milano	Milan, Italy , Sep 2018 – Oct 2020
Exchange program – Keio University	Tokyo, Japan , Mar 2019 – Aug 2019
B.Sc., Engineering Physics (with honors) - Politecnico di Milano	Milan, Italy , Sep 2015 – Jul 2018

LEADERSHIP EXPERIENCE

QYRA – Quantum Young Researcher Association – Active Member	Singapore
• Organized professional development and networking events for early-career professionals	Jan 2024 – Dec 2024
LeadTheFuture Mentorship - Mentor	Online
• Mentoring 3 college students interested in pursuing a career in quantum computing.	Sept 2023 – Present
Entrepreneurship Club Polimi - Founder and President	Milan, Italy
• Established the first entrepreneurial student club in Politecnico di Milano. • Coordinated a team of 20 students	Jan 2020 – Dec 2020