

Professional Summary

Software Engineer specializing in quantum computing at IQM Quantum Computers. Experienced in full-stack quantum computer development, including circuit to pulse transpilation, software performance benchmarking and distributed computing. Background in computer science with focus on concurrency, data structures and parallel computing.

Professional Experience

2024–present **Software Engineer, IQM Quantum Computers, Espoo, Finland**

- Led and contributed to a major refactoring of the intermediate pulse representation, improving scalability and enabling device-agnostic support across multiple superconducting quantum hardware platforms.
- Exposed new hardware capabilities through stable, user-facing APIs, bridging low-level device features with higher-level quantum software stacks.
- Re-architected performance-critical components to use asynchronous and concurrent execution models, significantly improving throughput and reducing end-to-end execution latency.
- Collaborated closely with hardware, calibration, and research teams to translate experimental requirements into robust, production-ready software systems.

2022–2024 **Consultant, Netlight Consulting, Helsinki, Finland**

- Interviewed and independently selected to work with IQM Quantum Computers, joining their quantum software team as a software engineer.
- Strengthened skills in technical communication, product-minded engineering, and informal team leadership through Netlight's consulting environment.

2020–2022 **Co-Founder, Clozeta, Helsinki, Finland**

- Co-founded an online clothing rental platform offering subscription-based and one-time rentals to consumers.
- Served as the sole engineer on the founding team, designing and developing the entire web product end-to-end, including backend services, frontend application, and deployment infrastructure.
- Built and operated production systems independently, taking responsibility for architecture, implementation, reliability, and iteration based on user needs.

2019–2020 & **Specialist SoC SW, Nokia, Espoo, Finland**

- 2021–2022 ○ Worked as a trainee and later as a permanent specialist in the SoC R&D department
- My work consisted mainly of programming ASIPs that were able to handle FFT & iFFT efficiently and implementing a state machine based on the properties of the signals.

Education

2020–Present **Master's Degree in Computer Science, Aalto University, Espoo, Finland**

- Currently writing my thesis on distributed quantum computing.
- Degree pursued alongside full-time industry work in quantum software engineering.

2017–2020 **Bachelor's Degree in Computer Science, Aalto University, Espoo, Finland**

- Bachelor's thesis: "Odotuksettomat tietorakenteet" (Wait-free Data Structures, 2019)
- Explored lock-free and wait-free concurrent data structures: wait-free queues, counters, and related concurrency primitives.

Skills

Programming & Tools	Python (primary), Golang, Javascript, Asynchronous programming, Parallel Computing, C++, C, Docker
Quantum Computing	Full-stack quantum software, Distributed Quantum Computing
Concurrency	Lock-free / wait-free data structures, multi-processing / multi-threading, Distributed Systems

Contributed Publications

- 2025 Above 99.9% Fidelity Single-Qubit Gates, Two-Qubit Gates, and Readout in a Single Superconducting Quantum Device (arXiv:2508.16437, 5+ citations)
- 2025 A Superconducting Qubit-Resonator Quantum Processor with Effective All-to-All Connectivity (arXiv:2503.10903, 6+ citations)
- 2024 Technology and Performance Benchmarks of IQM's 20-Qubit Quantum Computer (arXiv:2408.12433, 30+ citations)