

Daniel Vonk

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Citizenship: Australian (E-3 work-authorized, **no** visa lottery or H-1B etc. required)

Summary — Systems Engineer with 3 years of experience in large-scale C++ systems. Current academic research in quantum compilers for neutral-atom architectures. Expertise in HPC with C++20, CUDA+MPI, as well as Python and its ML frameworks.

Skills

Programming Languages	C++20, Rust, Python
Parallel / HPC	CUDA, MPI
Tools	Git, CMake, PyTorch
Languages	English (native), German (fluent), French (intermediate)

Education

Technical University of Munich (TUM), Germany

Oct 2023 – Oct 2025

Computer Science MS

- Specialization in quantum compilers as well as GPU-accelerated HPC.
- **Publication:** *MultiQ: A Compiler-Controller Co-Design for Efficient Multi-programming on Neutral Atom Quantum Architectures*. Co-author. ASPLOS '26 (submitted).
- **MS Thesis (Oct '25):** *A Formal Verification Model and Language for the Correctness of Programs on Neutral Atom Quantum Computers*. Submission to CAV '26 planned.
- 1st place in *EuroTeQathon '24* competition. The prototype used machine learning to analyze satellite data to improve efficiency in livestock farming. Presented idea at *Ecole Polytechnique*, Paris.

RWTH Aachen University, Germany

Oct 2017 – Oct 2021

Computer Science BS

- **BS Thesis** (Oct '21): *Simulation of Realistic Crowds in Virtual Environments by Means of Influence Maps and Visitor Patterns*.
- German language of instruction.

Experience

Helmholtz-Hereon Center

Apr 2024 – Sep 2024

HPC Internship

- Wrote high-performance C++ software for neutron scattering physics simulations on supercomputers.
- Contributed a hybrid CUDA+MPI scattering runtime, where I wrote new CUDA kernels for physics algorithms along with the TaskFlow and cuFFT libraries to beat the previous implementation's performance.

KDAB

Dec 2021 – Mar 2025

Software Engineer (C++)

- KDAB is a spin-out of the Linux KDE project and provides C++/OpenGL/Qt training and consulting services.
- Consulted for several multinational firms where I helped upgrade their codebases to modern C++, resolve performance issues and engineer new features.

Nuance Communications [now Microsoft Corp.]

Sep 2018 – Sep 2019

Internship in an NLP firm developing software for automotive sector