Calin A. Georgescu

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Summary

I am a highly driven computer scientist and mathematician currently pursuing a PhD in Quantum Computing at the Delft University of Technology. My experience is broad and includes topics such as foundational mathematical modeling, developing and shipping software, and solving real-life problems in multidsiciplinary teams. I greatly value trust, curiosity, courage, and empathy in the workplace.

Experience

Ph.D. Candidate at the **Delft Institute of Applied Mathematics, TU Delft. 2023 – 2026.**

- Formulated and implemented novel Quantum Algorithms for Computational Fluid Dynamics.
- Lead the development of the open-source QLBM software framework.
- Taught 10 MSc. course editions (>1000 students) on topics in Scientific and Quantum Computing.
- Collaborated with international industrial partners Fujitsu Ltd. in Japan.

Teaching and Research Assistant, TU Delft. 2020-2023.

- TA in courses on Software Engineering, Operating Systems, and Scientific Programming.
- Automated grading and feedback processing C++ for programming assignments.
- Conducted research in state machine learning for software systems.

Education

2021 – 23 **MSc. Computer Science, AI Technology. Cum Laude. TU Delft.**
Courses in Machine and Reinforcement Learning, Optimization, and Software Architecture.
Thesis: *Test Program Generative Fuzzing for Differential Testing of the Kotlin Compiler.* (9.5)

2018 – 21 **BSc. Computer Science. TU Delft.**
Courses in Embedded Systems, Algorithm Design, Software Engineering, Numerical Analysis.
Thesis: *Modeling System Behaviour from Log Analysis Using Meta-Heuristic Search.* (9.0)

Skills

Languages	Fluent in English and Romanian; basic comprehension in German and Dutch.
Programming	Proficient in Java, C++, Python. Experienced in Rust, Bash, C, Haskell, Kotlin, Julia, Go.
Frameworks	Qiskit, Numpy, Pandas, Scipy, Matplotlib PyTorch, Tket, MPI.
Technologies	UNIX tools, Docker / Podman, Kubernetes, Git, CI/CD (GitLab, GitHub).

Publications

1. C. A. Georgescu and M. Möller, "A practical implementation of quantum lattice boltzmann algorithms," *Proceedings of the 35th Parallel CFD International Conference 2024*, pp. 23–26, 2025. DOI: 10.34734/FZJ-2025-02446.
2. C. A. Georgescu, M. A. Schalkers, and M. Möller, "Fully quantum lattice gas automata building blocks for computational basis state encodings," *arXiv preprint arXiv:2506.12662*, 2025. URL: https://arxiv.org/abs/2506.12662.
3. C. A. Georgescu, M. A. Schalkers, and M. Möller, "Qlbm – a quantum lattice boltzmann software framework," *Computer Physics Communications*, vol. 315, p. 109 699, 2025, ISSN: 0010-4655. DOI: https://doi.org/10.1016/j.cpc.2025.109699.

4. C. A. Georgescu and M. Möller, "Quantum search in superposed quantum lattice gas automata and lattice boltzmann systems," *arXiv preprint arXiv:2510.14062*, 2025. URL: https://arxiv.org/abs/2510.14062.

5. C. A. Georgescu, M. Olsthoorn, P. Derakhshanfar, M. Akhin, and A. Panichella, "Evolutionary generative fuzzing for differential testing of the kotlin compiler," *Companion Proceedings of the 32nd ACM International Conference on the Foundations of Software Engineering*, pp. 197–207, 2024. URL: https://dl.acm.org/doi/abs/10.1145/3663529.3663864.

Events and Talks

Organized Events

- 2025, Tokyo — Seminar session on quantum CFD and quantum software at Fujitsu Ltd.
- 2024, Montreal — Tutorial session at IEEE Quantum Week: *Algorithms for Quantum Boltzmann Methods*.

Conference Talks

- 2025, Aachen — AQMCSE'25: *Quantum Lattice Gas Automata: Properties, Extensions, and Applications*.
- 2024, Bonn — ParCFD35: *A practical implementation of quantum lattice Boltzmann algorithms*.

Events and Seminars

- 2025, TU Delft — Poster presentation at the *future computing* event of the DCSE.
- 2025, QuTech — Presented at the Quantum CFD Lab booth at the Delft Quantum Showcase.
- 2024, TU Delft — Numerical Analysis Koffiepaartje: talk on quantum programming.
- 2023, Fujitsu Ltd. — Online Seminar on quantum lattice Boltzmann methods.
- 2023, Jetbrains — Online seminar on generative fuzzing for compiler testing.

Teaching Experience

- 2024/25/26 — Applied Quantum Algorithms (MSc)
  Object Oriented Scientific Programming with C++ (MSc)
  Scientific Computing (MSc)
- 2023/24 — Applied Quantum Algorithms (MSc)
  Object Oriented Scientific Programming with C++ (MSc)
  Scientific Computing (MSc)
  Numerieke Wiskunde (BSc)
- 2022/23 — Object Oriented Scientific Programming with C++ (MSc)
  Software Engineering Methods (BSc)
- 2021/22 — Object Oriented Scientific Programming with C++ (MSc)
  Operating Systems (BSc)