

Education

Bachelor of Science in Computer Science and Software Engineering

Sept 2019 - July 2023

Saint-Petersburg State University

Master of Science in Mathematics

Sept 2022 - April 2025

Pontifical Catholic University of Rio de Janeiro

Work Experience

Quantum Software Engineer

February 2024 - current

I am working in a growing startup QC Design for over a year and managing up to 4 people's work integration into the software. I implemented a modest algorithm for dealing with qubit's possibility of being [leaked](#) from the computational system. I brought a new infrastructure that allowed implementing algorithms in c++ and calling them from Python using CPython. I achieved more than a 10000x speedup for simulations of challenging noise models in the circuit. I added support for [Bosonic system's](#) noise and [Spanning technique](#) that allows for the simulation to converge not to an approximation but to a precise value of the Logical Error Rate for any coherent noise. I also worked on the belief-propagation decoders as well as matching decoders, which were challenging to implement efficiently.

Huawei Assistant Engineer, Developer

October 2021 - January 2022

Worked on backend C#/.netASP/EntityFramework/Autofac + frontend 3js/react/VR. Developed a system of package communication with no delay that alternates between http and signalR requests.

Yandex Developer Intern

July - Sept 2021

Worked in two teams on backend C++/Python/SQL. Developed a support system for training scripts to work with stored variable logs. Wrote tests for components that were used to prepare data for a neural network that makes recommendations.

Projects

Simulation of photonic quantum computing

2023

Developed a web service dedicated to simulation of linear and non-linear optics for quantum computational models using Python and Django. Used [Strawberry fields](#) as an underlying engine. ([github](#))

Master's Thesis

2023-2025

Investigated a photonic-based model (Fusion-Based Quantum Computing) to implement a topological quantum memory. Explored error models and performed threshold estimations using matching-based decoders on FBQC codes. Demonstrated how logical qubits can be reliably stored by repeatedly fusing resource states, enabling a scalable approach to fault-tolerant quantum memory.

Undergraduate Thesis

2022-2023

I did research on optimal schemes of entangling transformations in linear quantum optics using a genetic algorithm with GPUs on Pytorch. New schemes were obtained for finding the maximum entangled state, as well as for implementing gates equivalent to CX in the KLM protocol. [Presentation](#).

Study of the Effect of Noise on Efficient Quantum Search Algorithms

2022

Implemented [improved Grover's search algorithm](#) with Qiskit and tested it's performance with different noise models. [Presentation](#).

Quantum Algorithms for VRP and VRPTW Problems

2021

Worked on the problem of finding routes for drilling machines for oil production in collaboration with GazpromNefit. Found a reduction of this problem to QUBO. Used Qiskit to solve it using VQE and QAOA.

Teacher Assistant

2023

Created homework and course notes on the course "Introduction to Quantum Computation", for prof. [Sergey Tikhomirov](#).

Quantum Computing and Quantum Information via NMR

2022

I operated an NMR device encoding and entangling two qubits at the School of Experimental Physics of CBPF earning a [certificate](#).

Qiskit Global Summer School 2022 - Quantum Excellence

2022

I excelled at Qiskit Global Summer School 2022 which was dedicated to quantum simulations, earning a [badge on Credly](#).

Programming Skills and Languages

- C++, Python, CPython, C#, C, Java, JavaScript, HTML, CSS, Kotlin, Haskell, Scala, SQL, Lean
- Pybind, ASPnet, EntityFramework, Microsoft SQL Express, React, three.js, postgresSQL, Django, Bootstrap
- Git, Linux, Unity3D, SVN, Blender(3d modeling), protobuf, Shiny, Docker
- Russian (Native), English (Fluent), Portuguese (Speaking)