

Ilia Luchnikov, PhD

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Geneva

EXPERIENCE

Postdoctoral Researcher

University of Geneva

09/2022 - 10/2023

Geneva

Company Description

- I am developing custom tensor networks based machine learning models for quantum systems dynamics prediction
- Tech stack: Python 3, Jax, Rust, Cuda C, Bash, Linux, Apptainer, Docker, Slurm Workload Manager, Git

Leading research fellow

Russian Quantum Center

01/2021 - 09/2022

Moscow, Russia

Company Description

- I was developing numerical and data-driven methods for quantum dynamics analysis and prediction
- Tech stack: Python 3, Jax, TensorFlow, Rust, C/C++, Bush, Linux, Git, GitLab

Research Scientist

Moscow institute of physics and technology

2015 - 2021

Moscow

Company Description

- Tech stack: Python 3, Numpy, Scipy, TensorFlow

EDUCATION

PhD in Theoretical physics

Moscow Institute of Physics and Technology

09/2017 - 09/2020

MSc in Applied mathematics and physics

Moscow Institute of Physics and Technology

09/2015 - 09/2017

BSc in Applied mathematics and physics

Moscow Institute of Physics and Technology

09/2011 - 09/2015

LANGUAGES

English

Advanced

Russian

Native

SKILLS

Programming languages

Rust (big fan of it)

Python

C/C++

Bash

Cuda C

Can quickly learn a language by demand

Frameworks

Jax(Python)

TensorFlow 1.x/2.x(Python)

PyTorch(Python)

Tokio(Rust)

Serde(Rust)

Actix(Rust)

Tonic(Rust)

Lalrpop(Rust)

PyO3(Rust and Python)

ndarray(Rust)

LAPACK/BLAS/ARPACK/CUBLAS/cuSOLVER

Technologies

Linux

HPC

Git

GitLab

Slurm

Docker

Apptainer

Applied mathematics

Convex optimization

Riemannian optimization

Deep learning

Bayesian methods

Tensor decompositions/tensor networks

Numerical linear algebra

Algorithms and data structures

STRENGTHS



Programming skills

I am capable of writing complex and maintainable software with use of most of the modern best practices



Deployment

Recently I got interested in proper delivery of my numerical/machine learning apps. I try to make them easy to run on any cluster/laptop, extensively using Bash scripting and containerization technologies. One of the recent examples is in here ([link](#))



Technical writing skills

I am capable of writing coherent and easy-to-read technical texts. I have reach experience in writing research papers (check my academic CV)



Complex solutions from scratch

I can write a complex high-performance numerical/machine learning application from scratch, without use of high level frameworks like numpy, only using C/Fortran/Cuda libraries. Some recent examples are here ([link1](#), [link2](#)). Or I can write an interpreter for a domain specific programming language.

FIND ME ONLINE



LinkedIn

<https://www.linkedin.com/in/ilia-luchnikov-56723b143/>



Google scholar

<https://scholar.google.com/citations?user=5wB0-tkAAAJ&hl=en>



GitHub

<https://github.com/LuchnikovI>

OPEN SOURCE PROJECT

QGOpt: the library for Riemannian optimization in quantum technologies



2020



Russia, Moscow

GitHub link: <https://github.com/LuchnikovI/QGOpt>.