Ilia Luchnikov, PhD

+41 76 290 1061 | luchnikovilya@gmail.com | Geneva

EXPERIENCE

Postdoctoral Researcher

University of Geneva

09/2022 - 10/2023 | Geneva

- I am developing 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

- 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

- 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 if necessar**

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 rich experience in writing research papers (check my academic CV or see my google scholar profile)

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).

FIND ME ONLINE

LinkedIn

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

Google scholar

https://scholar.google.com/citations?user=5wB0-tkAAAAJ&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.