Anatolii Antipov

Web: anatoly-antipov.github.io
E-mail: aantipov@nes.ru
Phone: +77058512282, +79153997814

Education

New Economic School (NES) Graduated: August 2019
Master of Arts in Economics, Specialization - Economics *Moscow, Russia*

Moscow Institute of Physics and Technology (State University) Graduated: August 2017
BSc in Applied Mathematics and Physics, Specialization - Applied Mathematics *Moscow, Russia*

Research Experience

Software developer and researcher 01/2021 – present
Russian Quantum Center, research group of Quantum Information Technologies

Research Assistant 07/2025 – present
Collaboration with Professor Ernest Liu

Research Assistant 08/2024 – 07/2025
Collaboration with Professor Aleh Tsyvinsky

Publications

2025, "Progress in the development of quantum algorithms and software", A.S. Nikolaeva, D.O. Konina, **A.V. Antipov**, M.A. Gavreev, K.M. Makushin, B.I. Bantysh, A.Y. Chernyavskiy, G.V. Astretsov, E.A. Polyakov, A.I. Saifoulline, E.O. Kiktenko, A.N. Rubtsov, A.K. Fedorov, *arxiv.org/abs/2505.04285*

2023, *work in progress* "Processing logical states under transformations in logical subspaces (code)", **A.V. Antipov**, E.O. Kiktenko, A.K. Fedorov, DOI: *10.5281/zenodo.10299331*

2023, "Realizing a class of stabilizer quantum error correction codes using a single ancilla and circular connectivity", **A.V. Antipov**, E.O. Kiktenko, A.K. Fedorov, *Phys. Rev. A 107, 032403*

2022, "Efficient realization of quantum primitives for Shor's algorithm using PennyLane library", **A.V. Antipov**, E.O. Kiktenko, A.K. Fedorov, *PLoS ONE 17(7): e0271462*

Conferences and Poster Sessions

2024, Talk "Description of the evolution of logical states under changes in the logical basis", *Microelectronics 2024*, Sochi, Russia

2023, Talk "Processing defects movements in surface codes", *Saratov Fall Meeting XXVII*, Virtual, Saratov, Russia

2023, Poster "Interface for performing fault-tolerant initialization, measurement, and logical operations using surface code with defects", *VII International Conference on Quantum Technologies ICQT-2023*, Moscow, Russia

2022, Talk "Realizing a class of stabilizer quantum error correction codes using a single ancilla and circular connectivity", *Microelectronics 2022*, Sochi, Russia

2021, Poster "Stabilizer code with a single ancilla and linear connectivity", *VI International Conference on Quantum Technologies ICQT-2021,* Moscow, Russia

2020, Poster "Assessing Predictive Power of the Kalman Filter on the Russian Economy", *Summer School of Machine Learning at Skolkovo Institute of Science and Technology*, Virtual

Software

QuantumOperations (Python) contains efficient realization of the quantum part of Shor's algorithm, namely, order finding procedure and other quantum primitives
Nonparametric-Logistic-Regression (Python) contains implementation of nonparametric logistic regression using natural cubic splines and regularization penalizing curvature of the resulting function

Other Experience

Data scientist 08/2019 – 01/2021
DataNerds AI *Moscow, Russia*

- full-cycle development (communication with a client, problem statement, building model and model deployment) of ML models predicting financial performance using a pool of more than 1 million clients in a top-10 Russian retail bank
- developed program module emulating client's database for the purpose of testing ML model's performance
- devised regularization method for Random Forest algorithm exploiting particular data structure and implemented it with Numpy
- participated in sales activities by initiating and taking part in a meeting with potential clients

Intern at risk department 07/2018 – 12/2018
Alfa-Bank *Moscow, Russia*

- implemented a specification of Kalman filter for estimating trend of 100 billion rubles portfolio for the risk evaluation process

Mentor 10/2016 – 05/2017
Foxford (educational technology) *Moscow, Russia*

- provided guidance and educational services for high-school students who entered MSU, HSE, MIPT, Bauman MSTU and MEPhI

Teacher 09/2016 – 05/2017
Evening Physics and Technology School at the Moscow Institute of Physics and Technology *Moscow, Russia*

- taught mathematics to high school students

Analyst 06/2015 – 07/2015
Physicon (educational technology) *Moscow, Russia*

- developed informatics course for high-school students
- wrote grant proposals in collaboration with CEO for a joint project worth over 7.5 million rubles to the company

Qualifications

Languages: Russian (native), English (fluent - TOEFL 104 points), Chinese (beginner - HSK 2)
Computing skills: Python, R, Stata