

Anatolii Antipov

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Education

New Economic School (NES)	09/2017 – 08/2019
<i>Master of Arts in Economics, Specialization - Economics</i>	<i>Moscow, Russia</i>
Moscow Institute of Physics and Technology (State University)	09/2011 – 08/2017
<i>BSc in Applied Mathematics and Physics, Department of Control and Applied Mathematics</i>	<i>Moscow, Russia</i>

Research Experience

Software developer and researcher	01/2021 – present
<i>Russian Quantum Center, research group of Quantum Information Technologies</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none">• conducted research in the field of quantum information and quantum error correction• gave lectures on quantum computing for students and professionals• held internal seminars on quantum algorithms and quantum error correction for research group colleagues• developed software packages realizing quantum algorithms, quantum error correction frameworks and transpilation protocols	

Publications

- 2023**, "Processing logical states under transformations in logical subspaces (code)", **A.V. Antipov**, E.O. Kiktenko, A.K. Fedorov, DOI: [10.5281/zenodo.10299331](https://doi.org/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

- 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

Further Education program: "Quantum Optics and Communications", National University of Science and Technology, MISIS

Languages: Russian (native), English (fluent - TOEFL 104 points), Chinese (beginner - HSK 2)

Computing skills: Python, R