Anatoly Antipov

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Education

New Economic School (NES) 09/2017 – 08/2019
Master of Arts in Economics, Specialization - Economics *Moscow, Russia*

Moscow Institute of Physics and Technology (State University) 09/2011 – 08/2017
BSc in Applied Mathematics and Physics, Department of Control and Applied Mathematics *Moscow, Russia*

Research Experience

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

- 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
- participated in the process of cloud service integration with ion-trapped quantum processor

Publications

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*
2022, "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, *submitted to Physical Review A (under review), available from ArXiv*

Conferences and Poster Sessions

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), Chinese (HSK 2)
Computing skills: Python, R