

# Anatoly Antipov

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## Education

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

## Research Experience

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

## Publications

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**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

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**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

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*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

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<b>Data scientist</b>	08/2019 – 01/2021
<i>DataNerds AI</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none"><li>• 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</li><li>• developed program module emulating client's database for the purpose of testing ML model's performance</li><li>• devised regularization method for Random Forest algorithm exploiting particular data structure and implemented it with Numpy</li><li>• participated in sales activities by initiating and taking part in a meeting with potential clients</li></ul>	
<b>Intern at risk department</b>	07/2018 – 12/2018
<i>Alfa-Bank</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none"><li>• implemented a specification of Kalman filter for estimating trend of 100 billion rubles portfolio for the risk evaluation process</li></ul>	
<b>Mentor</b>	10/2016 – 05/2017
<i>Foxford (educational technology)</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none"><li>• provided guidance and educational services for high-school students who entered MSU, HSE, MIPT, Bauman MSTU and MEPhI</li></ul>	
<b>Teacher</b>	09/2016 – 05/2017
<i>Evening Physics and Technology School at the Moscow Institute of Physics and Technology</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none"><li>• taught mathematics to high school students</li></ul>	
<b>Analyst</b>	06/2015 – 07/2015
<i>Physicon (educational technology)</i>	<i>Moscow, Russia</i>
<ul style="list-style-type: none"><li>• developed informatics course for high-school students</li><li>• wrote grant proposals in collaboration with CEO for a joint project worth over 7.5 million rubles to the company</li></ul>	

## Qualifications

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**Languages:** Russian (native), English (fluent), Chinese (HSK 2)  
**Computing skills:** Python, R