

Sergey Tereshkin

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Work Experience

2021-present Junior Research Engineer, Skolkovo Institute of Science and Technology.

Education

2020-present **Institute for Information Transmission Problems and Data Analysis (IITP RAS)**. Specialization courses (Machine Learning) and work on a bachelor thesis.

2018-present **Bsc in Applied Mathematics and Physics**, Moscow Institute of Physics and Technology (MIPT). Phystech-School of Applied Mathematics and Informatics. GPA — 4.53/5.

Completed Courses

MATHEMATICS Optimization (I, II), Probability Theory, Stochastic Processes, Linear Algebra, Discrete Mathematics, Calculus (I, II, III, IV), Differential Equations, Computational Mathematics, Functional Analysis, Abstract Algebra.

COMPUTER SCIENCE Object Oriented Programming (C++), Hardware and Operating Systems (Linux), SQL and Databases, Algorithms and Data Structures, Discrete Optimization (practice on Python), Parallel Algorithms.

Experience & Projects

- Python* **1. Calibration Methods and Metrics**, Skolkovo Institute of Science and Technology.
Pytorch implementation of [uncertainty calibration algorithms](#), such as Matrix Scaling, Vector Scaling, Temperature Scaling, Histogram Binning, and uncertainty calibration metrics for neural networks. My code was included in the whole framework Alpaca, which is used for further research in modern statistics and machine learning.
- 2. Multi-class detection Yolo-based model**, Skolkovo Institute of Science and Technology.
Pretraining a VGG16 model on CT scans for classification of human organs, then finetuning for detection, using a head from [Yolo](#) model. Pytorch implementation of such architectures as AlexNet, VGG16, Unet, Yolo and ResNet.
- 3. Coronary calcium project**, Skolkovo Institute of Science and Technology.
This project consists in training neural networks for measuring the amount of calcium in coronary vessels based on CT images (ongoing project). Under this project, I am training a Unet-based model on 3d-patches of CT images for heart and calcium segmentation.
- 4. Stochastic ResNet.**
Pytorch implementation of Stochastic Resnet. The same idea as in a Dropout layer is used for ResBlocks.
- 5. Discrete Optimization.**
[Discrete Optimization](#) assignments, such as travelling salesman problem, knapsack problem, etc.
- 6. MNIST with a small convnet.**
Training a small (approximately 35k parameters) self-made convolutional neural network and achieving a 99% accuracy on MNIST dataset (study assignment).
- C/C++* **7. Database implementation.**
Implementation of a [database](#) with the ability to add data, to delete and find data corresponding to a certain condition (study assignment).
- SQL* **8. Self-made database.**
[Self-made database](#) as a part of SQL course.

Technical skills

PROGRAMMING Python, C, C++, Latex, SQL

LIBRARIES PyTorch, sklearn, numpy, scipy, matplotlib, pandas

UTILITIES Jupyter Notebook, Google Colab, git, bash, tmux

Awards & Scholarships

2018-2019 & Scholarship for educational achievements

2020-present

2018 Phystech olympiad in mathematics, winner

2018 Phystech olympiad in physics, prize-winner

2018 Lomonosov olympiad in mathematics, prize-winner

Languages

English (Advanced C1, IELTS 7.5/9.0), Russian (native), French (Basic A1)