Popov Nicolai

Curriculum Vitae

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www.github.com/nickolor/CV

Education

2017-2021 **BSc in Applied Mathematics and Physics**, Chair of Information Transmission Problems and Data Analysis, Phystech School of Applied Mathematics and Informatics, Moscow Institute of Physics and Technology. Undergraduate student, **GPA** 4.86/5.00.

Key subjects Optimization, Computational Mathematics, Calculus, TFCV, Linear Algebra, Physics, Computer Science, Deep Learning, Parallel Programming, Machine Learning

Scholarships and Awards

2020-2021 Increased State Academic Scholarship Award for achievements in educational activity
2018-2020 Phystech Foundation Scholarship Award for top-ranked students of MIPT
2017 Awarded with Presidential Diploma for the most excellent students of Moldova
2015-2017 1^{st} and 2^{nd} places in national Olympiads in Maths, Chemistry, Physics

Computer Skills

Programming Python, C, SQL
Libraries pytorch, tensorflow, numpy, scipy, pandas, matplotlib, sklearn
Tools Jupyter Notebook, Linux, git, ssh, LaTeX

Publications

Image Processing Accuracy of neural network denoising of images depending on training set size
In co-authorship with Researcher Anton Grigoryev. IITP RAS *(the lab)*
Reported on the ITaS'20 conference and accepted for publication in SenSys Journal.

Projects & Experience

Computed Tomography Acceleration of FBP algorithm for CT | Smart Engines | 09.2020-Present
The goal of the project is to accelerate the convolution of two functions as the first step of Filtered Back Projection algorithm using optimization and interpolation methods.

Computer Vision Image Captioning with Attention | A part of MIPT 7th semester Deep Learning course
Pretrained VGG19 was taken to build feature vectors for positions in images and LSTM with attention stacked on top of that was used to generate captions.

Image Processing Weighted Neural Style Transfer | A part of MIPT 7th semester Deep Learning course
This is a modification of classic style transfer (Gatys et al., 2016) that uses segmentation to stylize segmented people less than background but more than their segmented skin.

Optimization SPAG | A part of MIPT 6th semester Optimization course | poster
Statistically Preconditioned Accelerated Gradient Method for Distributed Optimization (according to Back, Bubeck) was implemented and analyzed on the RCV dataset.

Data Science SMOTE | Supervisor Junior Researcher Artem Borzov | IITP RAS
Synthetic minority oversampling technique for imbalanced classification problem was compared with other techniques on Phoneme and Mammography datasets.

C/C++ Tic-tac-toe | A part of MIPT 3rd semester CS course
Client-server console game with TCP sockets.

Languages

English (Fluent), Romanian (Fluent), Russian and Gagauz (Native)