

Alim Bukharaev

Curriculum Vitae

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Education

2017–Present **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, 4th year (GPA 4.8/5).

Scholarships

2019–2020 Increased State Academic Scholarship Award for achievements in educational activity
2018–2019 Phystech Foundation Scholarship Award for top-ranked students of MIPT

Computer Skills

Programming Python, C/C++, SQL

Libraries pytorch, keras, tensorflow, opencv, numpy, scipy, pandas, matplotlib

Tools Jupyter Notebook, git, ssh, PyCharm, Docker, SGE, TMUX, L^AT_EX

Publications

Neuroscience and Medical Data Analysis **Adapting Probabilistic U-Net for Midline Shift Detection** IITP RAS (*the lab*)
In co-authorship and under supervision of Junior Researcher Maxim Pisov and Dr. Mikhail Belyaev
Published as part of the ITaS'19 conference (*the paper, the conference, poster and code*)

Projects & Experience

Medical Data Analysis **Vertebral Fracture Detection** IITP RAS (*the lab*) | March 2020 - Present
The goal of the project is to develop software capable of timely detection and estimation of potential osteoporosis-related vertebral compression fractures. Aside from production, I am currently working on an article that will be a sequel to *this one*. It is very probable that by the time you read this CV the paper has already been published, so please contact me so that I could share a link to it with you. Also, if you'd like to have a look at some code example of what I wrote for this project, don't hesitate to contact me

Deep Learning **Neuro-Ear** 🎧 As part of MIPT 6th semester CS and Optimization courses
A *website* featuring a neural network capable of distinguishing musical instruments by sound was written. Try it out! In case you are reading a printed version of this CV, here is the address: <https://bukharaev-alim.uk.r.appspot.com/classify>

CVision **Testing Pixellink** 🎧 Laboratory of Hybrid Intelligent Systems, MIPT | February–April 2019
The goal of the project was to study how well a novel image-segmentation algorithm Pixellink 🎧 works in collaboration with some text-reading models

Coursework

- Mathematics Statistics (ongoing), Probability Theory, Stochastic Processes, Optimization Methods, Computational Mathematics, Calculus (I, II, III, IV), TFCV, Functional Analysis, Linear and Abstract Algebra, Algorithms and Models of Computation, Discrete Analysis
- Computer Science Python Programming, Deep Learning (specialization by deeplearning.ai) *see certificates*, Hardware/Software Interface, Operating Systems (GNU/Linux), OOP (C/C++), Parallel Programming, experience of working with DICOM and other medical data formats

Other Projects and Homeworks

- Data Science **Breast Cancer** 🤖 As part of MIPT 7th semester Machine Learning course
Various ML techniques were tested on the Breast Cancer Wisconsin dataset
- Data Science **Spectral Analysis** 🤖 Supervisor Junior Researcher Artem Borzov, IITP RAS
Spectral Clustering Algorithm (according to Ng, Jordan and Weiss) was implemented on the Yahoo music dataset and compared with other clustering algorithms (*repo: MIPT-IITP*)
- C/C++ **Bash emulator** 🤖 A part of MIPT 3rd semester CS course
An emulator of the GNU Bash was written on C++
- C **PDP-11 emulator** 🤖 A part of MIPT 2nd semester CS course
An emulator of the PDP-11 16-bit minicomputer was written on C

Hobbies & Interests

Playing the guitar, English and Russian literature in the original, languages in general

Languages

English (Fluent, IELTS Academic 8.0), French (Basic), Russian and Volga Tatar (Native)

An electronic version of this CV with all working hyperlinks
is available at <https://github.com/alimbfromlimb/CV>