# 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, Department of Control and Applied Mathematics, Moscow Institute of Physics and Technology, Moscow. Undergraduate student, 4th year (current 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, LATEX

## 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 the 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 see some example code I wrote for this project, don't hesitate to contact me

**Deep Learning**    **Neuro-Ear** 🜚   As part of MIPT 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 link *https://bukharaev-alim.uk.r.appspot.com/classify*

**CVision**    **Testing Pixellink** 🜚   Laboratory of Hybrid Intelligent Systems, MIPT
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, 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 cerificates*, Hardware/Software Interface, Operating Systems (GNU/Linux), OOP (C/C++), Parallel Programming

## Other Projects and Homeworks

Data Science
**Breast Cancer** As part of MIPT Machine Learning classes
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 third semester CS course
An emulater of the GNU Bash was written on C++

C
**PDP-11 emulator** A part of MIPT second semester CS course
An emulater 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 8.0), French (Basic), Russian and Volga Tatar (Native)