

## EDUCATION

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**Master of Science** **Moscow Institute of Physics and Technology** **September 2019 — July 2021 (expected)**

- M.Sc. in Computer Science and Physics, Department of Innovation and High Technologies
- Applied Mathematics and Physics

**Bachelor of Science** **Moscow Institute of Physics and Technology** **September 2014 — July 2019**

- B.Sc. in Computer Science and Physics, Department of Innovation and High Technologies
- Coursework for the state qualification exam in Physics at MIPT: "Molecular Dynamics" [Code]
- Intermediate Coursework: "Advanced Parser for Biomedical Texts" [Poster at MCCMB'17]
- Undergraduate Coursework: "Development of a mechanism for anomaly detection" [Presentation] [Code]

## EXPERIENCE

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**Quantum Software Engineer Intern** **QuTech** **September 2019 — Present**  
Delft, Netherlands

- SimulaQron — framework for Quantum Internet.
- Supervisor Prof. dr. S. D. C. Wehner.
- Delft University of Technology.

**ML Engineer Intern** **3-shake** **August — September 2019**  
Tokyo, Japan (remotely)

- R&D audience extension.

**Machine Learning Researcher** **Laboratory for Digital Business** **March 2019 — Present**  
Moscow, Russia

- Responsible for research on Anomalies and Outliers Detection.
- Found and fixed a bug concerning model based on Generative Adversarial Active Learning (GAAL) in PyOD toolkit for outlier detection.
- Developed a system for anomaly detection. Used Flask and SQLAlchemy frameworks.

**Machine Learning Researcher** **OCRv** **July — August 2019**  
Sochi, Russia

- Laboratory of Artificial Intelligence and Neural Networks.
- Employee Turnover Prediction. EDA and implementation of ML systems in different fields of interest of Russian Railways.
- Responsible for Natural Language Processing, processing of legal documents.

**Machine Learning Researcher** **ChatFirst** **September 2018 — April 2019**  
Moscow, Russia

- Implementing different deep learning models to improve performance of chatbots, reading papers on related topics.
- Responsible for Natural Language Processing.
- Used BERT model to improve performance of production system in multiple aspects. Fine-tuned the model for downstream tasks.

**Quantum ML Researcher** **Russian Quantum Center** **January 2018 — March 2019**  
Moscow, Russia



## Contributed to Open source

- **PyOD** - PR #108
- **QISKit** - PR #366
- **pyQuil** - PR #371
- **SimulaQron** - PR#90
- **Gensim** - fixed issue #671
- **yandexdataschool/Practical\_RL** - PR #12
- **My projects on GitHub**

## SKILLS

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- **AI:** Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning, System Deployment
- **Programming languages:** Python, C/C++, bash, R, SQL; experienced with JavaScript, HTML and CSS
- **Python libraries:** numpy, scikit-learn, pandas; **for NLP:** NLTK, Gensim; **for Deep Learning:** PyTorch, TensorFlow; **for Quantum Computing:** QISKit, pyQuil, Q#; **for Web:** Flask; **for databases:** peewee, SQLAlchemy
- **DevOps:** containers (Docker), cloud computing (AWS, GCP), code testing, source control (git)
- **Russian:** native, **English:** fluent, **German:** basics (A2)
- Experimented with RaspberryPi and Arduino. [Projects](#)
- Founded "[MIPT Deep Learning Club](#)" to discuss and share ideas on deep learning topics. Led a few seminars on topics such as "Introduction to bayesian methods"
- Experienced with **3D modeling** (FreeCAD, Blender) and **3D printing** (Ultimaker Cura, Ender 3)

## TEACHING

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### Programming Existing Quantum Computers

May 8, 2018

Cryptography course at [Yandex School of Data Analysis](#)

### Deep Reinforcement Learning

October — December 2017

course at MIPT, based on [rl.berkeley.edu/deeprlcourse/](http://rl.berkeley.edu/deeprlcourse/)  
[Practical assignments](#)

### Deep Learning in Natural Language Processing

March — December 2017

course at MIPT, based on [cs224n.stanford.edu](http://cs224n.stanford.edu)  
[Practical assignments](#)

## PUBLICATIONS

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### "Revealing Quantum Chaos with Machine Learning"

February 2019

[arXiv preprint](#)

### "Neural Network Quantum State Tomography"

July 30 — August 3, 2018

[Superconducting Quantum Technologies \(SQT\)](#)  
Poster (based on <https://github.com/RQC-QApp/NNQST>)

### "Precision-guaranteed quantum process tomography: Application to IBM Quantum Experience"

May 21 — 25, 2018

[Central European Workshop on Quantum Optics \(CEWQO\)](#)  
Poster

### "Generative Adversarial Networks (GANs): Engine and Applications"

August 2017

[Medium Story](#)

### "Advanced Parser for Biomedical Texts"

July 27 — 30, 2017

[Moscow Conference on Computational Molecular Biology \(MCCMB\)](#)  
Poster, [Thesis](#)

## ADDITIONAL EDUCATION

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<b>"Quantum Computing" course at Skoltech</b>	<b><u>Quantum Computing</u></b>	<b>February 1 — March 16, 2018</b>
<ul style="list-style-type: none"> <li>• Final Project - <u>Quantum walks and Variational algorithm</u> for 3- and 4-level systems.</li> </ul>		
<b>"Summer school on Bayesian Methods in Deep Learning"</b>	<b><u>DeepBayes Summer School</u></b>	<b>August 26 — 30, 2017</b>
<b>"Big Data in Bioinformatics"</b>	<b><u>Bioinformatics Summer School</u></b>	<b>July 31 — August 5, 2017</b>
<ul style="list-style-type: none"> <li>• Participated in a hackathon during the school. <u>Project</u>.</li> </ul>		
<b>"Natural Language Processing" course (based on cs224d.stanford.edu)</b>	<b><u>DeepHack Lab</u></b>	<b>September — December 2016</b>
<ul style="list-style-type: none"> <li>• Accepted a proposal to become a Teaching Assistant after the end of the course.</li> </ul>		
<b>"Supercomputer technologies for atomistic modelling" course</b>	<b><u>Igor Morozov (IHED RAS)</u></b>	<b>September — December 2015</b>
<ul style="list-style-type: none"> <li>• Final Project - <u>Molecular Dynamics</u> is a program written in C using OpenMP framework for parallel computing. Used <u>VMD</u> for visualisation.</li> </ul>		
<b>MOOCs</b>		
<ul style="list-style-type: none"> <li>• <b>Improving Neural Networks: Hyperparameter tuning, Regularization and Optimization</b> by deeplearning.ai (2019)</li> <li>• <b>Neural Networks and Deep Learning</b> by deeplearning.ai (2019)</li> <li>• <b>Mathematics and Python for Data Analysis</b> by MIPT &amp; Yandex (2017)</li> <li>• <b>Molecular Biology and Genetics</b> by Bioinformatics Institute (2016)</li> <li>• <b>Neural Networks</b> by Bioinformatics Institute (2016)</li> </ul>		
<b>HACKATHONS</b>		
<b>Kraftwerk Accelerator, Bremen</b>	<b><u>Hackathon Bremen</u></b>	<b>September 20 — 22, 2019</b>
<ul style="list-style-type: none"> <li>• (expected)</li> </ul>		
<b>Kasárne/Kulturpark, Košice</b>	<b><u>Hack Kosice</u></b>	<b>March 30 — 31, 2019</b>
<ul style="list-style-type: none"> <li>• <u>Efficient and Faster Care</u> challenge</li> <li>• Implemented <u>healthcare system</u> using Zebra wristband printer and QR code scanner to identify patients easily</li> <li>• Reduced the amount of time needed to register a new patient</li> <li>• <u>Presentation</u></li> </ul>		
<b>Aalto University, Helsinki</b>	<b><u>Junction</u></b>	<b>November 23 — 25, 2018</b>
<ul style="list-style-type: none"> <li>• <u>Applications with Bluetooth Mesh</u> challenge</li> <li>• Worked with <u>Zephyr RTOS</u> and <u>reel board</u> that has built-in Bluetooth transceiver</li> <li>• Developed simple Industrial Internet of Things (IIoT) project which demonstrates the advantage of Bluetooth Mesh network</li> </ul>		
<b>Tochka Kipeniya, Moscow</b>	<b><u>Space Apps Challenge</u></b>	<b>October 20 — 21, 2018</b>
<ul style="list-style-type: none"> <li>• <u>Firefighter Bot for Telegram</u></li> <li>• Implemented during <u>Space Apps 2018 Challenge</u> using data from NASA including <u>Active Fire Data</u> by NASA</li> <li>• Python, python-telegram-bot</li> <li>• <u>Presentation</u></li> </ul>		
<b>Volkshotel, Amsterdam</b>	<b><u>Quantum Internet Hackathon</u></b>	<b>October 13 — 14, 2018</b>
<ul style="list-style-type: none"> <li>• Worked with framework for Quantum Internet called <u>SimulaQron</u></li> <li>• Contributed to the <u>SimulaQron project</u> on GitHub</li> <li>• <u>Implemented</u> quantum leader-election algorithm</li> </ul>		

- 1<sup>st</sup> place
- There were problems on (1) quantum process tomography and (2) solving 3-SAT problem with QAOA
- Python, Quantum Information Toolkit (QIT)

**Aalto University, Helsinki****Junction****November 24 — 26, 2017**

- LegalEngine - website/telegram chat-bot/email notification system, "qqmbr" team member, challenge by Castrén & Snellman
- Our solution makes the client-attorney interaction easier with the use of telegram chat-bot and email notifications, the attorney's work and billing more transparent to the client.
- Python, Flask library, html, css

**EPFL, Lausanne****LauzHack****November 11 — 12, 2017**

- 1<sup>st</sup> place in challenge by SGS, "NN:Nerds" team member, Presentation
- Solution allows quick access to the main concepts found in documents.
- Responsible for development of telegram-bot and processing documents using IBM Watson service for Natural Language Understanding. Devpost.
- Python, IBM Watson API, Telegram API

**Phystechpark, Moscow****mABBYlity****October 7 — 8, 2017**

- 4<sup>th</sup> place, "App in the Restaurant" iOS application, Demo, Presentation
- App allows to recognise entities from restaurant menus using smartphone's camera and translates them. ABBYY Real-Time Recognition SDK, ABBYY Lingvo API and Spoonacular API were used.
- Python, Flask library

**Skolkovo Moscow School of Management, Moscow****Neurocampus****September 22 — 24, 2017**

- 2<sup>nd</sup> place, @SenseOfSpeech\_bot telegram-bot, Presentation
- Solution allows to extract emotions from user's recorded speech. Also it helps to train selected emotion with samples from TED talks.
- Speech Emotion Recognition (SER) module by Vokaturi was used as a core for telegram-bot based system to help users improve speech during performances.
- Python, Telegram API

**MIPT, Moscow****Bioinformatics Summer School****August 3 — 4, 2017**

- "Prediction of Experimental Metadata from Gene Expression"
- Used Machine learning algorithms to predict phenotype by gene expression. Distinguish with high accuracy samples of male and female tissues of Mus musculus organism. Datasets from Gene Expression Omnibus were used. Project.

**ITMO, Saint Petersburg****BioHack****March 3 — 5, 2017**

- Text Mining, parsing the records from PubMed and UMLS.
- Analysis of research trends of chemical compounds and diseases during period of 1990-2015 using parsed information from PubMed database. Project.
- Python

**Wanha Satama, Helsinki****Junction****November 25 — 27, 2016**

- Used a python wrapper around the Twitter API and Topic Modeling of tweets (gensim).