

EXPERIENCE

Data Scientist OCRv **July 2019 (expected)**

- Responsible for Natural Language Processing, processing of legal documents.

Research Fellow Laboratory for Digital Business **March 2019 — Present**

- Responsible for research on Anomalies and Outliers Detection.

R&D Data Scientist ChatFirst **September 2018 — April 2019**

- Implementing different deep learning models to improve performance of chatbots, reading papers on related topics.
- Responsible for Natural Language Processing.

Research Fellow Russian Quantum Center **January 2018 — March 2019**

- Responsible for Quantum Computing, Machine Learning.
- Developed a series of seminars concerning Quantum Computing. They include jupyter notebooks with basics of linear algebra, quantum mechanics and also work with QISKit (IBM), pyQuil (Rigetti) and Q# (Microsoft) was demonstrated.
- Supervised research student's bachelor degree diploma "Precision-Guaranteed Single-Qubit Process Tomography".
- Became a member of IBM Qiskit on GitHub.
- "Revealing quantum chaos with machine learning" — arXiv preprint.

Teaching Assistant Laboratory of Neural Networks and Deep Learning **March — December 2017**

- Responsible for preparing practical and theoretical assignments for the course of Reinforcement Learning and theoretical assignments for the course of Natural Language Processing with the number of 100+ enrolled students each.

Research Assistant Laboratory of Functional analysis of the Genome **June 2016 — December 2017**

- Research on protein function analysis.
- Text mining, Natural language processing, Keyword extraction, Machine learning algorithms. As an intermediate result the new method of keywords extraction using Information Theory proposed (ResearchGate).
- Participated in development of NLP package SciLK which was designed specifically for text-mining in natural sciences like biology and chemistry.

Data Scientist Sberbank-Technology **August — October 2017**

- Responsible for Natural Language Processing projects.
- Participated in preparing the datasets and building baselines for competition Sberbank Data Science Journey which is based on SQuAD.
- Developed an analogue of Amazon Mechanical Turk to improve experience of colleagues who evaluated the quality of collected datasets (Python, Flask).

- Negotiated with IBM engineers and applied some of the IBM Watson's services in tasks of signal processing.
- The system of baby cry recognition was built.

EDUCATION

Moscow, Russia

Moscow Institute of Physics and
TechnologySeptember 2014 —
July 2019 (expected)

- 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]
- Undergraduate Coursework: "Development of a mechanism for anomaly detection" [Code]

TECHNICAL EXPERIENCE

Projects

- **Service for Reading** (2019)
- **Quantum Computing Bot** (2018). Monitoring the load of IBM Q processors from IBM Quantum Experience. Bot is already available inside QISKit workspace in Slack (soon it will be uploaded here: <https://github.com/Qiskit/qiskit-bot>). And it's available on Telegram: <https://t.me/QuantumComputingBot>.
- **Quantum Keypad** (2018). This keypad allows to easily compose quantum circuits of different kinds. Besides keypad itself, Quantum Keypad consists of a power bank and Raspberry Pi Zero W. As a simulator I used QISKit package for Python. Inspired by Model Q.
- **Reverse Engineering in Dispersion Engineering** (2018). With my friend from EPFL we have a project on Dispersion Engineering. Our model predicts parameters of resonator system's simulation.
- **Frontopolar** (2017). Applied Reinforcement Learning for Stock Trading. State of the art results were reached. Different approaches were tested including Q-learning and Recurrent Reinforcement Learning.

Contributed to Open source

- QISKit - PR #366
- pyQuil - PR #371
- SimulaQron - PR#90
- Gensim - fixed issue #671
- yandexdataschool/Practical_RL - PR #12
- My projects on GitHub

SKILLS

- **Russian:** native, **English:** fluent, **German:** basics (A2)
- **Programming languages:** Python, C/C++, bash, R, experienced with SQL and JavaScript
- **Python libraries:** numpy, sklearn, pandas; **for NLP:** NLTK, Gensim; **for Deep Learning:** TensorFlow, PyTorch; **for Quantum Computing:** QISKit, pyQuil, Q#; **for Web:** Flask
- Experimented with RaspberryPi and Arduino. Projects
- Started "MIPT SciTech 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). Examples of models

TEACHING

Programing Existing Quantum Computers

May 8, 2018

Cryptography course at Yandex School of Data Analysis

Deep Reinforcement Learning

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

October — December 2017

Deep Learning in Natural Language Processing

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

March — December 2017

PUBLICATIONS

"Revealing quantum chaos with machine learning"

arXiv preprint

February 2019

"Neural Network Quantum State Tomography"

[Superconducting Quantum Technologies \(SQT\)](#)
Poster

July 30 — August 3, 2018

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

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

May 21 — 25, 2018

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

Medium Story

August 2017

"Advanced Parser for Biomedical Texts"

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

July 27 — 30, 2017

ADDITIONAL EDUCATION

"Quantum Computing" course at Skoltech

[Quantum Computing](#)

February 1 — March 16, 2018

- Final Project - [Quantum walks and Variational algorithm](#) for 3- and 4-level systems.

"Summer school on Bayesian Methods in Deep Learning"

[DeepBayes Summer School](#)

August 26 — 30, 2017

"Big Data in Bioinformatics"

[Bioinformatics Summer School](#)

July 31 — August 5, 2017

- Participated in a hackathon during the school. [Project](#).

"Natural Language Processing" course (based on cs224d.stanford.edu)

[DeepHack Lab](#)

September — December 2016

- Accepted a proposal to become a Teaching Assistant after the end of the course.

"Supercomputer technologies for atomistic modelling" course

[Igor Morozov \(IHED RAS\)](#)

September — December 2015

- Final Project - [Molecular Dynamics](#) is a program written in C using OpenMP framework for parallel computing. Used [VMD](#) for visualisation.

HACKATHONS

Kasárne/Kulturpark, Košice

Hack Kosice

March 30 — 31, 2019

- Efficient and Faster Care challenge
- Implemented healthcare system using Zebra wristband printer and QR code scanner to identify patients easily
- Reduced the amount of time needed to register a new patient
- Presentation

Aalto University, Helsinki

Junction

November 23 — 25, 2018

- Applications with Bluetooth Mesh challenge
- Worked with Zephyr RTOS and reel board that has built-in Bluetooth transceiver
- Developed simple Industrial Internet of Things (IIoT) project which demonstrates the advantage of Bluetooth Mesh network

Tochka Kipeniya, Moscow

Space Apps Challenge

October 20 — 21, 2018

- Firefighter Bot for Telegram
- Implemented during Space Apps 2018 Challenge using data from NASA including Active Fire Data by NASA
- Python, python-telegram-bot

Volkshotel, Amsterdam

Quantum Internet Hackathon

October 13 — 14, 2018

- Worked with framework for Quantum Internet called SimulaQron
- Contributed to the SimulaQron project on GitHub
- Implemented quantum leader-election algorithm

Skoltech, Moscow

Quantum Hackathon

May 18, 2018

- 1st 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

- 1st 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

- 4th 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

- 2nd 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).