

# Alexandra Senderovich

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## Education

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2018 – 2022   **National Research University Higher School of Economics**, Faculty of Computer Science, Bachelor's Programme "Applied Mathematics and Information Science"

GPA: 9.67 / 10 | Cumulative rating: 1 / 225

**Relevant courses:**

- Machine Learning
- Deep Learning, Deep Learning in Audio
- Bayesian Methods for Machine Learning
- C++, Python programming
- Algorithms and data structures
- Computer architecture and operating systems
- Distributed Systems

2021   **2-week School "Fundamentals of Bioinformatics and Mathematical Biology"**  
at Education Center "Sirius" for talented students

**Courses:**

- Algorithms in Bioinformatics
- Protein Structure
- Molecular Biology
- Organic Chemistry

2019   **Summer internship "Fundamentals of Computer Vision and Machine Learning"**

by Associate Professor, PhD A. Konushin, grade: 10 points out of 10

- Implemented the calculation of HOG descriptors
- Built models and trained artificial neural networks using scikit-learn and keras

## Work Experience

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2021   **Summer@EPFL, Switzerland, research internship.** The project topic: "[D-Cliques Construction](#)", research conducted at SACS (Scalable Computing Systems Lab) under supervision of Postdoc Erick Lavoie

- Worked with decentralized machine learning
- Developed distributed algorithms for building a communication topology and methodology for comparison of these algorithms

## Achievements

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2021   First place at **Bachelor Student Research Paper Competition** held by National Research University Higher School of Economics

2020, 2021   First-degree diploma at "**Vyshaya Liga**" Olympiad in Applied Mathematics and Informatics

2019   Second place with the team "Granb" at **Hack.Moscow v3.0** hackathon

- Developed a parser for websites using Python's BeautifulSoup library
- Implemented a search for songs using last.fm API

## Projects

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2021   **Group research project** "Stable Neural Network Training Algorithm Based on SVD of Convolutional Layers", supervisor – Associate Professor, PhD Maxim Rakhuba

- Implemented a new compressed convolutional layer
- Proved a theorem about singular values of a convolutional layer in case of multidimensional images

2020   **Group software project** "The development of a system for generating 3D-faces"

- Worked with 3D computer graphics
- Implemented one out of two steps of an algorithm for example-based facial rigging

- 2020    Participated in **The School of Future CTO**
- Worked on a service for videocalls
  - Implemented ORM and Rest Api in Go for database interaction

## Scholarships

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2018 – current    Grant of the President of the Russian Federation for talented students

2022, January-June    Travel Grant and Scholarship for the winner of Bachelor Student Research Paper Competition

2018 – 2020    Moscow Government scholarship for distinguished achievements in education

## Skills

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Python:	● ● ● ● ●	<b>Languages:</b> Russian (Native), English (C1; IELTS: 8.0 out of 9, obtained in 2020), German (A2)
ΛT <sub>E</sub> X:	● ● ● ● ●	
C/C++:	● ● ● ● ○	
Java:	● ● ● ○ ○	
SQL:	● ● ● ○ ○	
Go:	● ● ○ ○ ○	

## Scientific interests

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Machine Learning, Computer Vision, Audio Processing, Algorithms, Bioinformatics, Linguistics