

## EDUCATION

**Moscow Institute Of Physics And Technology** GPA: 9.51/10; in the top 5% of the university  
*Bachelor of Science, Applied Mathematics & Computer Science* 08.2016 — 08.2020  
Department of Discrete Mathematics

**Relevant courses:** applied statistics, optimization, machine learning, deep learning, stochastic processes, algorithms and data structures (3 terms), concurrent programming, distributed programming

## RESEARCH EXPERIENCE

**Research Internship, Computational Biology, DKFZ/EMBL, Heidelberg, 01.07.2019 — 01.01.2020**

**Supervisor:** [Oliver Stegle](#), PhD (Cambridge), Group Leader at: DKFZ, EMBL Heidelberg, EMBL-EBI  
My project is about inferring clonal structure in a tumor sample by integrating multiple single-cell modalities (scCNV and scSNV) coming from patients with cancer. I am working on the modifications of the [Cardelino](#) model under supervision of [Yuanhua Huang](#) (EMBL-EBI). At the same time, I have done a lot of data preparation myself in Python and C++. I tried to write the code capable of fully exploiting the resources of the dedicated HPC cluster. I also learned about the best practices of reproducible research (snakemake pipelines, environment isolation) and applied my knowledge of variational inference.

**Mutual analysis of interaction networks and quantitative trait loci for yeast, 2018-present:**

**Supervisor:** [Yuri Pritykin](#), PhD (Princeton), Research Scholar at [MKSCC](#)

Detailed project description is available [on GitHub](#).

- Implemented different approaches to QTL mapping in yeast, from [basic](#) to [state-of-the-art](#)
- Integrated PPINs into QTL analysis. Implemented statistical tests using [igraph](#) package.
- Carried out GWAS on NGS expression data. Learned how to tackle domain-specific difficulties arising from large-scale hypothesis testing using FDR-correction techniques (especially [qvalue](#)).
- Learned how to write fast and memory-efficient scientific code using numpy, scipy and pandas.
- Practiced parallel programming, interprocess communication and data persistency in Python.
- Utilized MIPT supercomputing capabilities, learned how to use SLURM.
- Worked with GeneOntology and KEGG API and related Python/R tools.

## HONORS

- [Abramov Scholarship For Academic Excellence](#) 2nd term — present  
Earned by top 10% students by cumulative GPA in their academic program.
- [Russian Government Scholarship For International Students](#) 2016 — 2020  
Was selected to become one of 3 Ukrainians to receive the full-coverage scholarship to study CS at the best Russian universities and got enrolled to MIPT directly, without entrance examination.
- [Governor of the Moscow Region Scholarship For Academic Excellence](#) Autumn 2017  
Awarded termly to excellent students for promising achievements in scientific activities.
- [Future Biotech Winter Retreat "Genome function, editing and therapy"](#) Winter 2019  
Became one of 70 young researchers selected to participate in top biotech school in Russia sponsored by companies like AstraZeneca, Biocad, GE Healthcare etc.
- [Summer School in Bioinformatics](#) by [Russian Bioinformatics Institute](#) Summer 2017  
Became one of 50 CS majors selected to participate. Was a member of a hackathon-winning team.
- [Moscow International Workshops in Competitive Programming](#) Autumn 2016, Spring 2017  
Two-times participant of the leading Russian competitive programming bootcamp.
- [ACM ICPC Moscow Subregional Contest \(1/4 World Finals\)](#) Autumn 2017  
Our team ranked 17 among 301 participating teams and 7th at home university.

## REFERENCES

**Dr. Yuri Pritykin** (thesis supervisor), research scholar at MKSCC  
**Federal Prof. Andrei Raygorodsky**, head of department at MIPT

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