# Ilya Vorontsov (Илья Воронцов)

Orekhoviy b-r 25-80, Moscow, Russia 115563

 +7(926)616-08-92  vorontsov.i.e@gmail.com  github.com/VorontsovIE  Google Scholar

## Education

**Vavilov Institute of General Genetics**  Sep. 2013 – Sep 2017
*PhD Candidate in Genetics / Bioinformatics*  *Moscow, Russia*

**Moscow Institute of Physics and Technology; Yandex School of Data Analysis**  Sep. 2011 – June 2013
*Master of Science in Computer Science*  *Moscow, Russia*

**Moscow Institute of Physics and Technology**  Sep. 2007 – June 2011
*Bachelor of Science in Mathematics and Physics*  *Moscow, Russia*

## Technical Skills

**Languages**: Ruby, Python, Java, C++, Bash, JavaScript, HTML/CSS, SQL, R, MATLAB

**Technologies/Framework**:
- (web development) Ruby on Rails, Sinatra, Flask, jQuery, RabbitMQ, web scraping;
- (system administration) Linux, Nginx, Docker, Git, pip and gem packaging;
- (data analysis and number crunching) NumPy, scikit-learn, PyTorch, Cython, trove, classical machine learning and neural networks, image processing;
- (visualization) d3.js, LaTeX;
- (linked data) RDF, SPARQL, Wikidata.

## Work Experience

**Vavilov Institute of General Genetics**  January 2012 – Present
*Research fellow*  *Moscow, Russia*
- Study gene regulation using methods of statistics, data analysis and machine learning.
  It resulted in several popular databases in the field of gene regulation and a bunch of high-profile publications and several international collaborations.
- Develop tools and data-processing pipelines for analysis of genomics data (Ruby, Java, Python, R, Bash).
- Optimize tools for high-performance number crunching (Java, C++, NumPy, Cython).
- Packaging of complex tools for reproducible results (Docker, pip, gem)
- Resolve tricky bugs in third-party software.
- Create and maintain web versions of tools. Create and maintain custom web interfaces for navigating through databases/ (Full-stack web development; Ruby on Rails, Javascript, SQL)
- Maintain web infractructure of the lab.
- Write and publish scientific papers.
- Peer-review papers.
- Featured tools, databases, and web resources:
  * hocomoco.autosome.ru – database of transcription factor binding sites models (HOCOMOCO).
  * opera.autosome.ru – sequence motifs analysis toolbox with user-friendly web interface.
  * papolarity – python package for analysis of Ribo-Seq data.

## Teaching activities

**Yandex** October 2016 – May 2021
*Course author and teacher assistant* *Moscow, Russia*
- (September 2020 – May 2021) Author of the course on Algorithms and Data Structures.
- (June 2020 – October 2020) Teacher assistant of the course on Algorithms and Data Structures.
- (October 2016 – July 2017) Author of the course on the Basics of Python.

**Public secondary school for gifted students "Intellectual"** September 2019 – Present
*Teacher of programming and computer science* *Moscow, Russia*
- Teach courses in web-development, algorithms and data structures, data analysis.
- Supervised programming projects in data science, web development, and Android development.

**Initiative Summer School of Applied Programming "Slon"** Spring 2007 – Present
*Co-organizer, supervisor and teacher* *Puschino, Russia*
- Legal registration of the school and budgeting.
- Supervised programming projects in web development, data science, bioinformatics, image processing, and physical modelling.
- Teach programming, computer science, and mathematics.

**Other** 2006 – Present
*Teacher, tutor, mentor and supervisor*
- Teacher and supervisor in courses on math, physical modelling, computer science, web-development, data analysis, bioinformatics in lots of summer schools, programming courses, and as a self-employed tutor.

## Featured projects

**Independent research and programming activities**

(2020) ⬈ Analysis of draft dynamics in USSR during World War II (in Russian).

(2018) ⬈ Analysis of sci-hub daily activity patterns in different countries (in Russian).

(2017) ⬈ Automatic Identification of the Repressed Families. And further integration of collected data into wiki-based project "Open List". Won 1st place in the International Memorial data-hackathon.

(2016) ⬈ Interactive historical map of battles, based on the data obtained from wikidata and scraped from wikipedia (supervisor).

**ENCODE-DREAM Challenge** 2016

(2016) ⬈ Member of the top-performing team in the "ENCODE-DREAM in vivo Transcription Factor Binding Site Prediction Challenge".

**Online hackathon in Digital Humanities** August 2020
*Co-organizer*
Arranged the program of the event. Prepared six tracks with various problems. Supervised participants.

**École polytechnique fédérale de Lausanne – EPFL** March 2019
*Visiting scholar* *Lausanne, Switzerland*
Short term scientific mission "Development of TFBS model benchmarking web-service" (R, Docker).
Funded by European Cooperation in Science and Technology (as a part of "Gene Regulation Ensemble Effort for the Knowledge Commons" initiative).

## Grants

- (2016-2019) Skoltech personal research fellowship in Systems Biology "Prioritizing non-coding variants by transcription regulatory potential", Moscow, Russia

- (2016) Russian Fund for Basic Research grant 16-34-01318-mol_a "Somatic mutations and selection pressure in gene regulatory regions of cancer genomes", Moscow, Russia