

ILYA VORONTSOV (Илья Воронцов)

Orehoviy 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, JavaScript, jQuery, React, 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, seaborn, ggplot, 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 (sklearn, pytorch, numpy, pandas). 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 infrastructure 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

OpenBio

August 2024 – Present

Course author

remote

- (August 2024 – Present) Author of the course on classical Machine Learning approaches in biomedical sciences.

Eduson

December 2022 – Present

Course author

remote

- (December 2022 – Present) Author of the courses on JavaScript development and IT-intro, wrote some chapters on Python development, and Databases.

Yandex

October 2016 – May 2021

Course author and teacher assistant

remote

- (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 schools for gifted students: “Intellectual” and “Silaeder” September 2019 – July 2024

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