Ilia V. Popov, MD

Scopus | Web of Science | ORCiD | Google Scholar | ResearchGate

GitHub Profile | Personal website

EDUCATION

Bioinformatics Institute — **Saint Petersburg, Russia**

Retraining program, Bioinformatics for Biologists — Sep 2023 – May 2024

- Project: «The shadow of HIV: searching for indirect signs of HIV infection in cell-free DNA» samples – GitHub
- GPA: 3.0 (4.0 – max)

Rostov State Medical University — **Rostov-on-Don, Russia**

Medical Doctor degree, Faculty of Pediatrics — Sep 2017 – June 2023

- Graduated with honors
- GPA: 4.85 (5.0 – max)

EXPERIENCE

Junior Researcher — **Rostov-on-Don, Russia**

Institute of Life Systems, Don State Technical University — Sep 2023 – present

- Analyzed metagenomic and genomic data in RSF-funded projects on bat microbiota and microbial ecology
- Built reproducible pipelines in Snakemake, Python, and R for metagenomics and phylogenomics
- Performed pangenome reconstruction, phylogenomic analysis, and metabolic profiling across diverse microbial datasets
- Contributed to papers and grants, including first-author work; led figures and methods

Teaching Assistant — **Rostov-on-Don, Russia**

Bioengineering and Veterinary Medicine Faculty, — Sep 2022 – Nov 2024

Don State Technical University

- Maintaining faculty's website
- Making PowerPoint presentations

Research Intern — **Jakarta, Indonesia**

Department of Food Technology, Bina Nusantara University — Feb 2023 – July 2023

- Field work: trip to East Nusa Tenggara Province: Kupang City & North Kodi Township. Participation in the organization of a clinical trial involving more than 100 children in 4 different groups. Collection of biological samples for data analysis (blood, stool)

- Dry lab work: genome annotation of *Lpb. plantarum* strain IS-10506; metagenomic data analysis; visualization of the results with publication-quality graphs
- GitHub

Laboratory Assistant **Rostov-on-Don, Russia**

Histological laboratory, Don State Technical University Sep 2021 – Aug 2022

- Post-mortem examination of laboratory animals
- Tissue processing: tissue fixation, embedding and microtomy
- Staining of histological slices
- Analysis and interpretation of histological slices

Laboratory Assistant **Rostov-on-Don, Russia**

Microbiology and Virology department, Sep 2020 – June 2021

Rostov State Medical University

- Preparation of culture media, bacterial and fungal extraction and inoculation, cell culturing
- Serial dilution of antibacterial and antimycotic agents
- Assessment of cytotoxicity (MTT test) and Minimum Inhibitory Concentration (spectrophotometry)

SKILLS

Programming

- Python (Numpy, Pandas, Matplotlib, Seaborn, Biopython)
- R (tidyverse, DESeq2, MaAsLin2, ggtree)
- Linux, Bash, git, GitHub

Software Development

MyAwesomeEDA – Python Exploratory Data Analysis Module
KEGGaNOG – Tool for generating KEGG pathways completeness heatmaps from eggNOG-mapper annotations
Phyloki – Tool to fetch seqs metadata from NCBI GenBank to annotate phylogenetic trees
KrakenParser – Tool to parse multiple Kraken2 reports into CSV files on 6 taxonomical levels

- Python programming: modular, object-oriented design
- CLI design: built clear, configurable command-line interfaces
- Packaging & distribution: PyPI deployment, setuptools configuration
- Documentation & testing: inline docstrings, README authoring, pytest-based unit tests

Statistics

- Summary statistics, hypothesis testing
- Correlation analysis, linear models
- Graphical visualization of statistics

Bioinformatics

- Databases (NCBI, UniProt, dbSNP, ClinVar, SNPedia, OMIM)
- Quality checking & trimming of NGS data
- Genome assembly, genome annotation
- Haplogroups establishing, SNPs annotation

- Differential gene expression analysis based on (sc)RNA-seq data
- Metagenomic & microbiome analysis
- Phylogenetics & evolutionary dating

Machine Learning Methods

- k-Nearest Neighbors, Linear Regression, Clustering (t-SNE), Decision Trees Ensemble Methods, Multilayer Perceptron, Convolutional Neural Networks

Languages

- Russian – Native
- English – 8.0 IELTS (TRF: 23ID001367POPI010A)

COURSES

- «Integrating AI into scientific work», Blastim, Moscow
- «Food Microbiology», BINUS University, Jakarta
- «Analysis of NGS data», Bioinformatics Institute, Saints-Petersburg
- «Management of R&D projects», Sirius University, Sochi
- «Python & Linux for Bioinformatics and Biology», Blastim, Moscow
- «Summer school of biomedical data analysis», MIPT, Moscow
- «Statistics, R and data analysis», Blastim, Moscow

AWARDS

- Scholarship of the President of the Russian Federation
- Scholarship of the Governor of the Rostov region
- Student of the Year-2020, Winner in the nomination «Intellect of the Year», Ministry of Science and Higher Education of the Russian Federation
- Winner of the All-Russian contest of R&D projects «GREAT CHALLENGES for students», Sirius University of Science & Technology

GRANTS

- Russian Science Foundation project № 25-24-00351 «Epizootological monitoring of white nose syndrome and other fungal infections of bats in the Rostov region», 2025-2026 (3 000 000 RUB), Role: Principal Investigator
- Russian Science Foundation project № 23-14-00316 «Features of the immune system and intestinal microbiota of synanthropic bats as a basis for predicting emerging infections», 2023-2025 (21 000 000 RUB), Role: Researcher
- Internship grant from the Ministry of Science and Higher Education of the Russian Federation to study abroad (BINUS University, Jakarta, Indonesia), 2023 (14 100 EUR)
- Grant «UMNIK» of the Foundation for Assistance to Innovations, 2021 (500 000 RUB)
- Four-time winner of the «Smart Scholarship» educational grant of the «Education and Science of the South of Russia» Foundation, 2019-2022 (160 000 RUB)
- Rostov Region Governor's Award «The Innovator», 2022 (105 000 RUB)

SELECTED PUBLICATIONS

1. Surono, I.S.; **Popov, I.V.**; Verbruggen, S.; Verhoeven, J.; Kusumo, P.D.; Venema, K. Gut microbiota differences in stunted and normal-length children aged 36 – 45 months in East Nusa Tenggara, Indonesia. **PLoS ONE** 2024, 19, doi:10.1371/journal.pone.0299349
2. Popov, I.V.; Mazanko, M.S.; Prazdnova, E.V.; **Popov, I.V.**; Trukhachev, V.I.; Derezina, T.N.; Kochetkova, N.A.; Ermakov, A.M.; Chikindas, M.L.; Popov, I.V.; et al. Effects of Spore-Forming Bacillus Probiotics on Growth Performance, Intestinal Morphology, and Immune System of Broilers Housed on Deep Litter. **Journal of Applied Poultry Research** 2024, 33, doi:10.1016/j.japr.2023.100396.
3. Popov, I.V.; **Popov, I.V.**; Krikunova, A.A.; Lipilkina, T.A.; Derezina, T.N.; Chikindas, M.L.; Venema, K.; Ermakov, A.M. Gut Microbiota Composition of Insectivorous Synanthropic and Fructivorous Zoo Bats: A Direct Metagenomic Comparison. **International Journal of Molecular Sciences** 2023, 24, doi:10.3390/ijms242417301.
4. Popov, I.V.; Berezinskaia, I.S.; **Popov, I.V.**; Martiusheva, I.B.; Tkacheva, E.V.; Gorobets, V.E.; Tikhmeneva, I.A.; Aleshukina, A.V.; Tverdokhlebova, T.I.; Chikindas, M.L.; et al. Cultivable Gut Microbiota in Synanthropic Bats: Shifts of Its Composition and Diversity Associated with Hibernation. **Animals** 2023, 13, doi:10.3390/ani13233658.
5. Popov, I.V.; Ohlopkova, O.V.; Donnik, I.M.; Zolotukhin, P.V.; Umanets, A.; Golovin, S.N.; Malinovkin, A.V.; Belanova, A.A.; Lipilkin, P.V.; Lipilkina, T.A.; **Popov, I.V.**; et al. Detection of Coronaviruses in Insectivorous Bats of Fore-Caucasus, 2021. **Scientific Reports** 2023, 13, doi:10.1038/s41598-023-29099-6.

SELECTED CONFERENCES

1. «KEGGaNOG: A Streamlined Solution for KEGG Pathway Annotation» – **Yakult International Symposium**, 2025, São Paulo, Brazil
2. «Comparative genomic analysis of densoviruses from the gut microbiota of bats: expanding the understanding of the role of bats in One Health» – **Physico-chemical biology in the year of the 270th anniversary of MSU**, 2025, Moscow State University, Moscow, Russia
3. «Metagenomic analysis of the intestinal microbiota of synanthropic bats: insect viruses, antibiotic resistance genes and metabolic potential» – **III GMMMC**, 2024, Skoltech, Moscow, Russia

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