



# Daniil Vlasenko

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## Education

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Master's program "Cognitive Science and Technology: from Neuron to Cognition"  
Institute for Cognitive Neurosciences, **National Research University Higher School of Economics (HSE University)**

Moscow, Russia, September 2023 – present

Bachelor's program "Applied Mathematics and Computer Science" Department of  
Mathematics and Mechanics, **St. Petersburg State University**

St. Petersburg, Russia, September 2019 – June 2023

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## Additional education

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Computational Neuroscience course, **Neuromatch Academy**

Online, 8 - 26 July 2024

**Mediterranean School of Complex Networks**

Grado, Italy, 30 June - 5 July 2024

Professional retraining program "Algorithmic Bioinformatics", **Bioinformatics Institute**

St. Petersburg, Russia, September 2022 – January 2023

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## Research experience

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**Russian Science Foundation Interdisciplinary Grant 24-68-00030 "Next Generation Cognitive Artificial Intelligence"**

Research-assistant

June 2024 - present

My tasks: development of representation methods of fMRI, EEG/MEG data in graph form and application of graph neural networks for a classification task of brain states.

Technologies: python, scikit-learn, pytorch geometric, igraph, nilearn, mne, scipy, numpy, pandas; R, dplyr, tidyr, ggplot2.

**HSE University, Institute for Cognitive Neurosciences, Strategic Project "Human Brain Resilience", subproject "AI-based listening diagnostic systems"**

Research-assistant

September 2023 – present

My tasks: development of neuromorphic dynamic models of speech information processing based on cross-frequency interaction of macroscopic brain rhythms.

Technologies: python, numpy, pandas, matplotlib, scipy, jax, imit\_utils, syllabify, brian2, brian2hears.

**Bioinformatics Institute**

September 2022 - February 2023

A series of educational research projects aimed at studying methods and tools for solving genomic bioinformatics problems. The project reports were presented in the form of scientific articles.

Technologies: terminal, bash; python, numpy, pandas; R, dplyr, tidyr, ggplot2.

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## Scholarships and fellowships

**Combined Master's-PhD track at HSE University**, the talent program designed for graduate students enrolled on full-tuition scholarships.  
September 2023 – present

**Academic Personnel Reserve (New Scientist category) at HSE University**, the talent management program aimed at supporting the professional development of promising teachers and researchers.  
January 2024 - present

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## Publications

D.V. Vlasenko, A.A. Zaikin, D.G. Zakharov, Classification of brain activity using synolitic networks, VII Scientific School "Dynamics of Complex Networks and their Applications", 2023 (conference proceedings).

D.V. Vlasenko, A.A. Zaikin, D.G. Zakharov, Classification of brain activity using synolitic networks, Izvestia VUZov, Prikladnaya Nelineinaya Dinamika, 2023 (in Russian).

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## Conferences

Baltic Forum 2023: Neuroscience, Artificial Intelligence and Complex Systems, VII Scientific School "Dynamics of Complex Networks and their Applications", topic "Classification of brain activity using Synolitic networks" (poster presentation).

SPISOK 2023, section "Computational Stochasticity and Statistical Models", topic "Classification of brain activity using synolitic networks" (oral presentation).

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## Languages

Russian (native), English (B2)

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## Skills

### Programming

Python – NumPy, Pandas, Matplotlib, SciPy, scikit-learn, PyTorch, PyTorch Geometric, igraph, nilearn, mne; R – dplyr, tidyr, ggplot2, igraph; C++; MySQL; algorithms and data structures; Linux-based operating systems; familiar with remote server operation (terminal, Bash), version control systems (git, GitHub), HTML, CSS, JavaScript and Selenium; preparing documents and presentation slides using LaTeX.

### Data analysis and machine learning

Classical data analysis; analysis of categorial data; network analysis; machine learning including deep learning; databases (SQL queries).

Analysis and preprocessing of fMRI, EEG/MEG data; analysis of neural electrode data (neuropixels probes).

### Mathematics

Statistics; probability theory; graph theory; algebra; mathematical analysis; analytic geometry; computational mathematics; optimization methods.