Vlasenko Daniil Vladimirovich

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Education

Master's program "Cognitive Science and Technology: from Neuron to Cognition" Institute for Cognitive Neurosciences, **National Research University Higher School of Economics**.
September 2023 – present

Bachelor's program "Applied Mathematics and Computer Science" Department of Mathematics and Mechanics, **St. Petersburg State University**.
September 2019 – June 2023

Professional retraining program "Algorithmic bioinformatics", **Bioinformatics Institute**.
September 2022 – January 2023

Work

The Theoretical Neuroscience Group of Institute for Cognitive Neuroscience, **National Research University Higher School of Economics.**
Research-assistant
September 2023 – present

Scholarships and Fellowships

Combined Master's-PhD track, the talent programme is designed for graduate students enrolled on full-tuition scholarships.
September 2023 – present

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

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).

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 synolithic networks" (oral presentation).

Research experience

National Research University Higher School of Economics, Institute of Cognitive Neurosciences, strategic project "AI-based listening diagnostic systems"
Research-assistant
September 2023 – present

The project is supervised by D.G. Zakharov and A.E. Osadchev. The aim of the project is to develop a system for diagnostics of hearing and syntactic speech perception based

on neuromorphic computational models. I perform tasks related to mathematical modeling.

Technologies: Python, NumPy, pandas, matplotlib, jax, imit_utils, syllabify, brian2, brian2hears.

National Research University Higher School of Economics, Institute for Cognitive Neurosciences, Theoretical Neuroscience Group
Research with Denis Zakharov (HSE) and Alexey Zaikin (UCL)
October 2022 - May 2023

Classification of brain activity using synolitic networks, investigation of the possibility of using synolitic networks in analysis of functional magnetic resonance imaging data. I was responsible for implementation and testing of the method. Based on these results, we made a publication.

Technologies: Python, NumPy, pandas, scikit-learn, igraph, nilearn; R, dplyr, tidyr, ggplot2.

Bioinformatics Institute
Student
September 2022 - February 2023

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

Technologies: terminal, Bash; Python, NumPy, pandas; R, dplyr, tidyr, ggplot2.

St. Petersburg State University, Faculty of Mathematics and Mechanics
Student
September 2022 - October 2023

The coursework on "Tasks of estimation of alignment significance using hidden Markov models". The purpose of the coursework was a task of reproducing the results of the article "Error statistics of hidden Markov models and hidden Boltzmann model results".

Technologies: C++; (profile) hidden Markov models; sequence alignment algorithms.

Languages

Russian, English (B2)

Skills

Programming
Python; R; C++; algorithms and data structures; Linux-based operating systems; familiar with remote server operation (terminal, Bash), version control systems (git, GitHub), databases (SQL queries), HTML, CSS and JavaScript; preparing documents and presentation slides using LaTeX.

Data analysis
Classical data analysis; analysis of categorial data; network analysis; RStudio, PyCharm, Jupyter Notebook; dplyr, tidyr, ggplot2; NumPy, pandas, SciPy, scikit-learn, Matplotlib, igraph; MySQL.

Analysis of fMRI, EEG and MEG data; nilearn, mle.

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

Certificates, additional education

Stepik Certificates
The Bioinformatics Institute's academic progress report