Daniil Vlasenko

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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 (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

Additional education

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

Research experience

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.

Teaching experience

Supervision of course and diploma works of undergraduate students, **HSE University**
September 2024 – present

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

Publications

D. Vlasenko, A. Zaikin, D. Zakharov, Ensemble methods for representation of fMRI, EEG/MEG data in graph form for classification of brain states, 8th Scientific School “Dynamics of Complex Networks and their Applications”, 2024 (conference proceedings).

D.V. Vlasenko, A.A. Zaikin, D.G. Zakharov, Classification of brain activity using synolitic networks, 7th 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 2024: 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).

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).

Languages

Russian (native), English (B2)

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.

Other

I started the project “MathBrain”. It’s aimed at promoting computational neuroscience and attracting students with backgrounds in mathematics and computer science to the Institute for Cognitive Neuroscience at HSE University.