

MAKSIM ZHDANOV | Curriculum Vitae

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RESEARCH INTERESTS

- **Geometric Deep Learning:** Equivariant Deep Learning, Clifford Deep Learning.
- **Generative Modeling:** geometric latent space models, learning on non-Euclidean domains.
- **AI4Science:** physics simulations, PDE modeling, physics-inspired deep learning.

I also find causality and its intersection with category theory quite interesting.

EXPERIENCE

RESEARCH ASSISTANT

Helmholtz AI @ Helmholtz-Zentrum Dresden-Rossendorf

04/2022 - ongoing

STUDENT ASSISTANT

Helmholtz AI @ Helmholtz-Zentrum Dresden-Rossendorf

09/2020 - 03/2022

STUDENT ASSISTANT

The Institute for Medical Informatics and Biometry

05/2020 - 12/2020

EDUCATION

TU DRESDEN

M.Sc. in Computer Science, GPA: 1.4.

Major: Machine Learning for Life sciences

10/2019 - 3/2022

Dresden, Germany

SAINT PETERSBURG STATE UNIVERSITY

B.Sc. in Physics, GPA: 1.2, with honours.

Major: Molecular Biophysics

9/2015 - 7/2019

Saint Petersburg, Russia

CONFERENCE PROCEEDINGS

- [Zhdanov, M., Steinmann, S., & Hoffmann, N. \(2022\). Investigating Brain Connectivity with Graph Neural Networks and GNNExplainer, ICPR 2022 \(Oral\).](#)

WORKSHOP CONTRIBUTIONS

- [Zhdanov, M., Randolph, L., Kluge, T., Motoaki, N., Gutt, C., Ganeva, M. & Hoffmann, N. \(2022\). Amortized Bayesian Inference of GISAXS Data with Normalizing Flows, Machine Learning and the Physical Sciences @ NeurIPS 2022](#)
- [Zhdanov, M., Steinmann, S., & Hoffmann, N. \(2022\). Learning Generative Factors of EEG Data with Variational auto-encoders, Deep Generative Models workshop @ MICCAI 2022 \(Oral\).](#)

OTHER PUBLICATIONS & PREPRINTS

- [Zhdanov, M., Hoffmann, N. & Cesa, G. \(2022\). Implicit Neural Filters for Steerable CNNs \(in progress\)](#)
- [Zhdanov, M. \(2022\). Analyzing Generative Factors of Functional Connectivity with Variational Autoencoders, Master thesis.](#)

SELECTED PROJECTS

- Implicit neural filters for steerable CNNs with application to point cloud data (in progress).
- Simulation-based inference for inverse scattering problems.
- Disentangled representation learning with graph VAEs for neuroimaging problems.
- Learning PDE from thermoimaging data with physics-informed NNs.

SKILLS

PROGRAMMING LANGUAGE Python | C++ | R
FRAMEWORKS & TOOLS Git | GROMACS | AutoDock Vina
LIBRARIES PyTorch | escnn | PyTorch Geometric | NumPy | Pandas
CONTRIBUTED TO Neural Solvers
LANGUAGES Native: Russian | Fluent: English | Intermediate: German

COMMUNITY SERVICE

MACHINE LEARNING AND THE PHYSICAL SCIENCES WORKSHOP @ NEURIPS 2022 reviewer	09/2022 online, USA
SYMMETRY AND GEOMETRY IN NEURAL REPRESENTATIONS WORKSHOP @ NEURIPS 2022 reviewer	09/2022 online, USA
ICPR 2022 reviewer	05/2022 online, Canada

EXTRACURRICULAR ACTIVITIES

SNI 2022 CONFERENCE poster presentation	09/2022 Berlin, Germany
LONDON GEOMETRY AND MACHINE LEARNING SUMMER SCHOOL poster presentation + project	07/2022 online, UK
SWISS EQUIVARIANT WORKSHOP participant	07/2022 Lausanne, Switzerland
MACHINE LEARNING SUMMER SCHOOL poster presentation	07/2022 Krakow, Poland
HZDR MACHINE LEARNING JOURNAL CLUB active participant	09/2020 - ongoing Dresden, Germany
HELMHOLTZ AI CONFERENCE poster presentation	06/2022 Dresden, Germany
INTERNATIONAL AI ARCHEOLOGY CHALLENGE 3rd place	04/2022 online, Israel
5. WORKSHOP BIOINFORMATICS MEETS MACHINE LEARNING Talk: "Investigating Brain Connectivity with Graph Neural Networks and GNNExplainer"	12/2021 online, Germany
MACHINE LEARNING SUMMER SCHOOL participant	08/2021 online, Taiwan

CASUS WORKSHOP

Talk: "Investigating Brain Connectivity with Graph Neural Networks and GNNExplainer"

09/2021

Gorlitz, Germany

HIDA COVID-DATA CHALLENGE

participant

04/2021

online, Germany