

Viacheslav (Slava) Borovitskiy

Ph.D. in Mathematics

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Assistant Professor in Machine Learning at the University of Edinburgh

<https://vab.im/>

ACADEMIC HISTORY

Lecturer (tenured asst. prof.) at the University of Edinburgh 2025–Now
School of Informatics, Institute for Adaptive and Neural Computation

Postdoc at Learning & Adaptive Systems Group, ETH Zürich 2022–2025

Ph.D. in Mathematics (harmonic analysis) Feb. 2022
St. Petersburg Department of Steklov Mathematical Institute RAS
Supervised by Academician Prof. S. Kislyakov

M.Sc. jointly with B.Sc. in Mathematics, with distinction Jun. 2017
St. Petersburg State University, Department of Mathematics and Mechanics

AWARDS & HONORS

(SELECTION)

ETH Zürich Postdoctoral Fellowship 2022
A personal grant of about 250 000 \$ for 2 years

Best Student Paper Award at AISTATS 2021
One award for best student paper and one award for best paper given out of 1527 submissions and 455 accepted papers (awards went to 0.1% of submissions)

Finalist of the competition for the Prize for Young Mathematicians of Russia 2021
The competition was affiliated with International Congress of Mathematicians. 17 Ph.D. students were nominated by the Russian mathematical community. I was one of the 6 shortlisted

Outstanding Paper Honorable Mention at ICML 2020
Two awards and two honorable mentions given out of 4990 submissions and 1086 accepted papers (awards and honorable mentions went to 0.08% of submissions)

Junior Leader grant of BASIS Foundation for the Advancement of Theoretical Physics and Mathematics 2019
As part of the team led by Dr. Nikolay Osipov, about 50 000 \$ for 3 years, 3 people

LANGUAGES

English (fluent), Russian (native)

Python & C++ (programming)

SCHOLAR

scholar.google.com/citations?user=1KqNyNMAAAAJ

GITHUB

github.com/vabor112

SOFTWARE

GeometricKernels

Python framework for kernels and Gaussian processes on manifolds, graphs, and meshes.
GitHub stars: 500+.

The theory I co-developed is implemented in popular libraries I did not contribute to: e.g. pathwise conditioning is implemented in B0Torch (3000+ GitHub stars), Trieste (200+ GitHub stars) and GPJax (500+ GitHub stars) which also implements graph Matérn kernels.

OTHER

ELLIS Society Member

SUPERVISION I lead the GLUEd—Geometric Learning & Uncertainty in Edinburgh—research group at the Institute for Machine Learning, School of Informatics, University of Edinburgh. For information on current and former students, see <https://vab.im/group/>.

SCIENTIFIC SERVICE *Reviewing for Journals* 2021–Now
Journal of Machine Learning Research (JMLR)
Journal of the Royal Statistical Society, Series B (JRSS B)
Biometrika
Bernoulli

Area Chairing 2024–Now
NeurIPS 2026
ICML 2026
AISTATS 2025 and 2026

Reviewing for Machine Learning Conferences 2021–Now
ICML (2021, 2022, 2024), NeurIPS (2021, 2023), ICLR (2025), AISTATS (2021), CoRL (2022)

TALKS *I gave 40+ talks at various venues in 10+ countries.* Below are a few selected ones.

Tutorial: Geometric Probabilistic Models
Nordic Probabilistic AI School (ProbAI) 2025, Norway Jun. 2025
The Conference on Uncertainty in Artificial Intelligence (UAI) 2024, Spain Jul. 2024

Guest lecture for “Probabilistic Artificial Intelligence” course Oct. 2023
ETH Zürich, in-person lecture for 500+ students

Geometric Gaussian Processes
ELLIS Talk, ISTA, Austria Jul. 2023
OxCSML Seminar, University of Oxford, UK Feb. 2023

Geometry-aware Gaussian Processes Dec. 2022
Workshop on Gaussian Processes, Spatiotemporal Modeling, and Decision-making
NeurIPS 2022, USA

Geometry-aware Gaussian Processes for Machine Learning Oct. 2022
Geometry Seminar, ETH Zürich, Switzerland

On a Common Ground Between Geological Modeling and Machine Learning Jun. 2022
Centro Pi Seminar, Instituto de Matemática Pura e Aplicada (IMPA), Brazil

Gaussian Processes on Riemannian Manifolds for Robotics Jul. 2021
Workshop on Geometry and Topology in Robotics (R:SS’21), Virtual

The full list of talks is available at <https://vab.im/talks/>.

PAPERS

(PUBLICATIONS)

MACHINE LEARNING

P. Mostowsky, V. Dutordoir, I. Azangulov, N. Jaquier, M. Hutchinson, A. Ravuri, L. Rozo, A. Terenin, **V. Borovitskiy**. The GeometricKernels Package: Heat and Matérn Kernels for Geometric Learning on Manifolds, Meshes, and Graphs. In Machine Learning Open Source Software, 2025.

C. Doumont, V. Picheny, **V. Borovitskiy**, H. Moss. Omnipresent Yet Overlooked: Heat Kernels in Combinatorial Bayesian Optimization. In Neural Information Processing Systems, 2025.

K. Wyrwal, A. Krause, **V. Borovitskiy**. Residual Deep Gaussian Processes on Manifolds. In International Conference on Learning Representations, 2025. **Oral**

I. Azangulov**, A. Smolensky**, A. Terenin, **V. Borovitskiy**. Stationary Kernels and Gaussian Processes on Lie Groups and their Homogeneous Spaces II: non-compact symmetric spaces. In Journal of Machine Learning Research, 2024.

I. Azangulov**, A. Smolensky**, A. Terenin, **V. Borovitskiy**. Stationary Kernels and Gaussian Processes on Lie Groups and their Homogeneous Spaces I: the compact case. In Journal of Machine Learning Research, 2024.

N. Jaquier, L. Rozo, M. González-Duque, **V. Borovitskiy**, T. Asfour. Bringing Motion Taxonomies to Continuous Domains via GPLVM on Hyperbolic Manifolds. In International Conference on Machine Learning, 2024.

D. Robert-Nicoud, A. Krause, **V. Borovitskiy**. Intrinsic Gaussian Vector Fields on Manifolds. In International Conference on Artificial Intelligence and Statistics, 2024. **Oral**

M. Yang, **V. Borovitskiy**, E. Isufi. Hodge-Compositional Edge Gaussian Processes. In International Conference on Artificial Intelligence and Statistics, 2024.

P. Rosa, **V. Borovitskiy**, A. Terenin, J. Rousseau. Posterior Contraction Rates for Matérn Gaussian Processes on Riemannian Manifolds. In Neural Information Processing Systems, 2023. **Spotlight**

B. Fichera, **V. Borovitskiy**, A. Krause, A. Billard. Implicit Manifold Gaussian Process Regression. In Neural Information Processing Systems, 2023.

E. Noskova, **V. Borovitskiy**. Bayesian optimization for demographic inference. In G3: Genes, Genomes, Genetics, 2023.

V. Borovitskiy*, M. R. Karimi*, V. R. Somnath*, A. Krause. Isotropic Gaussian Processes on Finite Spaces of Graphs. In International Conference on Artificial Intelligence and Statistics, 2023.

F. Pavutnitskiy*, S. O. Ivanov*, E. Abramov*, **V. Borovitskiy***, A. Klochkov*, V. Vialov*, A. Zaikovskii*, and A. Petiushko. Quadric hypersurface intersection for manifold learning in feature space. In International Conference on Artificial Intelligence and Statistics, 2022.

* Equal contribution

** Joint first author

M. Hutchinson*, A. Terenin*, **V. Borovitskiy***, S. Takao*, Y. W. Teh, and M. P. Deisenroth. Vector-valued Gaussian Processes on Riemannian Manifolds via Gauge-Independent Projected Kernels. In Neural Information Processing Systems, 2021.

N. Jaquier*, **V. Borovitskiy***, A. Smolensky, A. Terenin, T. Asfour and L. Rozo. Geometry-aware Bayesian Optimization in Robotics using Riemannian Matérn Kernels. In Conference on Robot Learning, 2021.

V. Borovitskiy*, I. Azangulov*, A. Terenin*, P. Mostowsky, M. P. Deisenroth, N. Durrande. Matérn Gaussian Processes on Graphs. In International Conference on Artificial Intelligence and Statistics, 2021.

Best student paper award

J. T. Wilson*, **V. Borovitskiy***, A. Terenin*, P. Mostowsky*, M. P. Deisenroth. Pathwise Conditioning of Gaussian Processes. In Journal of Machine Learning Research, 2021.

V. Borovitskiy*, A. Terenin*, P. Mostowsky*, and M. P. Deisenroth. Matérn Gaussian processes on Riemannian manifolds. In Neural Information Processing Systems, 2020.

J. T. Wilson*, **V. Borovitskiy***, A. Terenin*, P. Mostowsky*, and M. P. Deisenroth. Efficiently sampling functions from Gaussian process posteriors. In International Conference on Machine Learning, 2020.

Outstanding paper honorable mention

HARMONIC ANALYSIS

V. Borovitskiy. Littlewood–Paley–Rubio de Francia inequality for multi-parameter Vilenkin systems. In Mathematische Nachrichten, 2023.

V. Borovitskiy[†], N. Osipov[†], A. Tselishchev[†]. Burkholder meets Gundy: Bellman function method for general operators on martingales. In Advances in Mathematics, 2022.

V. Borovitskiy[†], S. Kislyakov[†]. Interpolation of abstract Hardy-type spaces. In Journal of Mathematical Sciences, 2022.

V. Borovitskiy. Littlewood–Paley–Rubio De Francia Inequality for the Two-Parameter Walsh System. In Journal of Mathematical Sciences, 2022.

V. Borovitskiy. Weighted Littlewood–Paley inequality for arbitrary rectangles in \mathbb{R}^2 . In St. Petersburg Mathematical Journal, 2021.

V. Borovitskiy. K-closedness for weighted Hardy spaces on the torus \mathbb{T}^2 . In Journal of Mathematical Sciences, 2018.

GEOSTATISTICS

N. Ismagilov, **V. Borovitskiy**, M. Lifshits, and M. Platonova. Boolean Spectral Analysis in Categorical Reservoir Modeling. In Mathematical Geosciences, 2021.

* Equal contribution

† Alphabetic ordering

SHORT NOTES

I. Azangulov[†], **V. Borovitskiy**[†], A. Smolensky[†]. On power sum kernels on symmetric groups. In Journal of Mathematical Sciences, 2025.

PAPERS (PREPRINTS)

B. Fichera, Z. Ivkovic, K. Jorner, P. Hennig, **V. Borovitskiy**. Bayesian Scattering: A Principled Baseline for Uncertainty on Image Data. arXiv preprint [arXiv:2603.20908](https://arxiv.org/abs/2603.20908). 2026.

PAPERS (NON-ARCHIVAL)

N. Ismagilov, I. Azangulov, **V. Borovitskiy**, M. Lifshits, and P. Mostowsky. Bayesian Inference of Covariance Parameters in Spectral Approach to Geostatistical Simulation. In ECMOR XVII, 2020.

N. Ismagilov, **V. Borovitskiy**, M. Lifshits, and M. Platonova. Boolean spectral analysis in categorical reservoir modelling. In Petroleum Geostatistics, 2019.

T. Malygina, **V. Borovitskiy**, Y. Porozov. Reproducibility Project: Deep-Site. Poster at Transylvanian Machine Learning Summer School 2018. [10.13140/RG.2.2.35686.06723/1](https://doi.org/10.13140/RG.2.2.35686.06723/1), 2018.

[†] Alphabetic ordering