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## Education

- 2022.** Ph.D. in Mathematics (harmonic analysis) from St. Petersburg Department of Steklov Mathematical Institute of Russian Academy of Sciences. Supervisor — Academician Prof. Sergei Kislyakov.
- 2018.** A course in algorithmic bioinformatics from Bioinformatics Institute in St. Petersburg, Russia. Upon graduation received a Honors Certificate, without a formal academic degree.
- 2017.** M.Sc. jointly with B.Sc. in Mathematics from St. Petersburg State University (Honors Diploma), Department of Mathematics and Mechanics, Division of Mathematical Analysis.

## Awards

- Awarded ETH Zürich Postdoctoral Fellowship, 2022.  
Shortlisted for Hooke Research Fellowship at Mathematical Institute, University of Oxford.  
Shortlisted for Junior Research Fellowship at Merton College, University of Oxford.
- Finalist of the competition for the Prize for Young Mathematicians of Russia, 2021.<sup>†</sup>
- Best Student Paper Award at AISTATS 2021.<sup>‡</sup>
- Outstanding Paper Honorable Mention at ICML 2020.<sup>§</sup>
- Best Poster Award at TMLSS, 2018.
- Best Student Award at Bioinformatics Institute, 2018.
- Honors Diploma from St. Petersburg State University, 2017.
- Winner of the all-Russian contest of schoolchildren' scientific works "Junior", 2012.

## Work Record

- From April 2022.** Postdoctoral Fellow at Learning & Adaptive Systems Group, ETH Zürich.
- 2019–2022.** Researcher at Euler International Mathematical Institute in St. Petersburg (Ph.D. funding).
- 2017–2022.** Researcher and R&D engineer at Chebyshev Laboratory of St. Petersburg State University. Projects in the fields of geostatistics, machine learning, dynamical systems modeling (Ph.D. funding).
- 2018.** Summer internship at Bioinformatics Institute. Project aiming to speed up certain biological signal processing procedure called "peak calling" with machine learning methods.
- 2012–2016.** Full stack web developer (Python, Django, JavaScript, Bootstrap) — volunteering for Baltic Science and Engineering Competition (scientific fair affiliated with Intel ISEF).

## Languages

**Natural:** Russian (native), English (fluent).

**Programming:** Python, C++.

## Links

- **Google Scholar:** [scholar.google.ru/citations?user=1KqNyNMAAAAJ](https://scholar.google.ru/citations?user=1KqNyNMAAAAJ)
- **GitHub:** [github.com/vabor112](https://github.com/vabor112). **Bitbucket:** [bitbucket.org/vabor112](https://bitbucket.org/vabor112)

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<sup>†</sup> One of the six shortlisted Ph.D. students. The competition is affiliated with International Congress of Mathematicians.

<sup>‡</sup> One award for best student paper and one award for best paper given out of 1527 submissions and 455 accepted papers.

<sup>§</sup> Two awards and two honorable mentions given out of 4990 submissions and 1086 accepted papers.

# Papers: Published or Accepted

## Machine Learning:

- 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. To appear in International Conference on Artificial Intelligence and Statistics, 2022.
- 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**<sup>†</sup>, S. Kislyakov<sup>†</sup>. Interpolation of abstract spaces of Hardy type. To appear in Journal of Mathematical Sciences.
- **V. Borovitskiy**. Littlewood–Paley–Rubio De Francia Inequality for the Two-Parameter Walsh System. In Journal of Mathematical Sciences, 2022.
- **V. Borovitskiy**<sup>†</sup>, N. Osipov<sup>†</sup>, A. Tselishchev<sup>†</sup>. On the Bellman function method for operators on martingales. In Doklady Mathematics, 2021.
- **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  $\mathbb{T}^2$ . Journal of Mathematical Sciences, 234(3):282–289, 2018.

## Geostatistics:

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

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\* Equal contribution

† Alphabetic ordering

# Papers: Preprints and Non-peer-reviewed

Preprints / in review:

- **V. Borovitskiy**. Littlewood–Paley–Rubio de Francia inequality for multi-parameter Vilenkin systems. arXiv preprint arXiv:2108.13891. 2021.
- **V. Borovitskiy**<sup>†</sup>, N. Osipov<sup>†</sup>, A. Tselishchev<sup>†</sup>. Bellman function method for general operators on martingales. arXiv preprint arXiv:2107.06384. 2021.

Non-peer-reviewed:

- 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 (Vol. 2020, No. 1, pp. 1-10). European Association of Geoscientists & Engineers, 2020.
- N. Ismagilov, **V. Borovitskiy**, M. Lifshits, and M. Platonova. Boolean spectral analysis in categorical reservoir modelling. In Petroleum Geostatistics 2019, volume 2019, pages 1–5. European Association of Geoscientists & Engineers, 2019.
- T. Malygina, **V. Borovitskiy**, Y. Porozov. Reproducibility Project: DeepSite. Poster at Transylvanian Machine Learning Summer School 2018. 10.13140/RG.2.2.35686.06723/1, 2018.

## Invited Talks

**March 2021** Sequential Decision Making with Gaussian Processes  
NTR Labs Webinar

**December 2021** Gaussian Processes in Machine Learning  
Probabilistic Techniques in Analysis: Spaces of Holomorphic Functions, Sirius Mathematics Center

**December 2021** Gaussian Processes for modeling functions with non-Euclidean domains  
Methods of Machine Learning Research Seminar, Tübingen, Germany

**October 2021** Gaussian process priors for functions with non-Euclidean domains  
Statistics, Artificial Intelligence, Machine Learning, Probability, Learning Theory Event (SAMPLE)

**August 2021** Gaussian Processes for Non-Euclidean Domains and Efficient algorithms for Them  
Conference of International Mathematical Centres in Sirius Educational Centre in Sochi

**July 2021** Gaussian Processes on Riemannian Manifolds for Robotics  
Workshop on Geometry and Topology in Robotics: Learning, Optimization, Planning, and Control

**May 2021** Gaussian Process Priors for Functions with Non-Euclidean Domain  
New Frontiers in High-Dimensional Probability and Applications to Machine Learning Workshop

**Feb 2021** Mini-course on Gaussian random fields in machine learning  
HSE and SPbU Joint Winter School in Mathematics and Theoretical Computer Science

**Jan 2021** Matérn Gaussian Processes on Riemannian manifolds  
Laboratory of applied research Skoltech-Sberbank

**Nov 2020** Gaussian random fields in machine learning  
Beijing-Saint Petersburg Mathematics Colloquium

**Oct 2020** Bayesian optimization  
Huawei Russian Wireless Workshop 2020

**Sep 2020** Gaussian Processes in Machine Learning  
Chebyshev Laboratory Student Colloquium

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<sup>†</sup> Alphabetic ordering

## Refereeing

- Journal of Machine Learning Research (JMLR)
- International Conference on Machine Learning (ICML) 2022
- Conference on Neural Information Processing Systems (NeurIPS) 2021
- International Conference on Machine Learning (ICML) 2021
- International Computer Science Symposium in Russia (CSR) 2021
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2021

## Other

- I co-organize the "Industrial Mathematics" seminar at Chebyshev Laboratory, SPbSU.