

# Curriculum Vitae



**Name/Surname** Alexander Korotin  
**Academic degree** PhD in Physics and Mathematics  
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## Professional Experience

**Skolkovo Institute of Science and Technology [Skoltech/RAIC]**  
*Center for Artificial Intelligence*  
03.2018 -  
Until Now  
Assistant professor (12.2023-until now)  
Head of "Generative AI" Research Group (12.2022-until now)  
Research Intern (03.2018-11.2022)  
(Research in generative modeling, optimal transport, diffusion models)  
**Supervisor:** prof. E. Burnaev (e.burnaev@skoltech.ru)



**Artificial Intelligence Research Institute [AIRI]**  
*Learnable Intelligence Group*  
11.2021 -  
Until Now  
Head of "Foundations of Generative AI" group (02.2025-until now)  
Senior research scientist (07.2024-until now)  
Research scientist (11.2021-until now)  
(Research in generative modeling, diffusion bridges)  
**Supervisor:** prof. E. Burnaev (burnaev@airi.net)



**Institute for Information Transmission Problems [IITP/Lab10]**  
*Laboratory No. 10 of Intellectual Data Analysis and Predictive Modeling*  
03.2017 -  
03.2018  
Intern-Researcher (Research in online learning: averaging experts' predictions)  
**Supervisor:** prof. E. Burnaev (e.burnaev@skoltech.ru)



**Yandex [Yandex/Research]**  
*Yandex Research*  
09.2016 -  
03.2017  
Intern-Researcher (Machine learning for time-series anomaly detection)  
**Supervisor:** G. Gusev (gleb57@yandex.ru)



**National Research University**  
**Higher School of Economics [HSE/CS/TCS]**  
*International Laboratory of Theoretical Computer Science*  
02.2016 -  
01.2017  
Intern-Researcher (Research in Discrete Geometry)  
**Supervisor:** prof N. Vereshchagin (nikolay.vereshchagin@gmail.com)



**Yandex**  
*Group for International Ranking*  
04.2014 -  
09.2014  
Intern-Developer (Data analysis for an internal project)  
**Supervisor:** E. Krokhalev



## Project Activities

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- Effective blind super-resolution with flow matching and bridge matching models**  
12.2024 - 12.2025 Developing methods to speed up modern blind image super-resolution methods based on diffusion and flow methods.  
*Joint Skoltech project with external partners.*  
Principal Investigator (PI)
- Diffusion models for transactional data**  
07.2024 - 12.2024 Studying the possibility of creating a generative model of transactional data based on the principles of diffusion models.  
*Joint Skoltech-Sber collaboration project.*  
Principal Investigator (PI)  
*Co-PI:* Egor Shvetsov (e.shvetsov@skoltech.ru)
- Mathematical methods and algorithms for efficient representation learning for semi-structured data for anomaly detection**  
2021-2023 *Grant RFBR 21-51-12005 NNIO\_a*  
Grant member (Conducting experiments)  
*Grant Head:* prof. E. Burnaev (e.burnaev@skoltech.ru)
- Unpaired learning from irregular geometric modalities**  
01.2021 - 12.2022 Development of new methods for unpaired learning tasks.  
*Joint Skoltech-MIT collaboration project [Next generation program].*  
Member of Project (Research & Computational Experiments)  
*Skoltech PI:* prof. E. Burnaev (e.burnaev@skoltech.ru)  
*MIT PI:* prof. J. Solomon (jsolomon@mit.edu)
- Unpaired learning**  
07.2020 - 06.2022 Development of new methods for unpaired learning tasks.  
*Joint Skoltech-Huawei collaboration project.*  
Member of Project (Research & Computational Experiments)  
*Skoltech PI:* prof. E. Burnaev (e.burnaev@skoltech.ru)
- Application of Neural Networks for Monitoring and Prediction of State of the Main Roads**  
10.2017 - 01.2018 *Research is supported by the Ministry of Education and Science of Russian Federation, grant No. 14.606.21.000.*  
Member of Grant (Research & Computational Experiments)  
*Grant Head:* prof. E. Burnaev (e.burnaev@skoltech.ru)
- Machine Learning for Modeling the Players' Behavior in On-line Team Games Based on their Psycho-Emotional State**  
09.2018 - 09.2021 *Research is partially supported by the Russian Foundation for Basic Research, project No. 18-29-22077\18.*  
Member of Grant (Research & Computational Experiments)  
*Grant Head:* prof. A. Somov (a.somov@skoltech.ru)
- Mathematical foundations of an intelligent adaptive system for managing information security events in large-scale networks**  
2016-2018 *Grant RFBR 16-29-09649 ofi\_m*  
Grant Member (Conducting computational experiments)  
*Grant Head:* prof. E. Burnaev (e.burnaev@skoltech.ru)












## Teaching Experience




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- 11.2024 **Fall ML School & Conference [ML2024]**  
Conducting the mini-course *Modern methods of generative modelling: flow matching and schrödinger bridges*



08.2024	<b>SMILES Machine Learning Summer School 2024 [Skoltech]</b> Conducting the <i>Course on Generative Models based on Adversarial Learning</i>	
07.2024	<b>Yandex Student Camp 2024</b> Conducting the <i>Course on Generative Models based on Adversarial Learning</i>	
02.2024	<b>Spring ML School [ML2024]</b> Conducting the mini-course <i>On a way to faster diffusion models with Schrodinger Bridges</i>	
2023, 2024	<b>Yandex School of Data Analysis [YSDA]</b> Course teaching: <i>Foundations of Generative Artificial Intelligence</i> (jointly with prof. E. Burnaev)	
08.2023	<b>SMILES Machine Learning Summer School 2023 [Skoltech]</b> Conducting the <i>Mini-course on Neural Optimal Transport</i>	
07.2023	<b>AIRI Summer School 2023 [AIRI]</b> Conducting the <i>Mini-course on Neural Optimal Transport</i>	
07.2022	<b>AIRI Summer School &amp; Conference 2022 [AIRI]</b> Conducting the <i>Tutorial on Neural Optimal Transport</i>	
09.2019	<b>Machine Learning Summer School 2019 [Skoltech]</b> Conducting the <i>Tutorial on the Theory of Deep Learning</i>	
2019,2020, 2021,2022	<b>Skolkovo Institute of Science and Technology [Skoltech]</b> Teaching Assistant on <i>Machine Learning</i> Course <i>Lecturer:</i> prof. E. Burnaev (e.burnaev@skoltech.ru) <i>Co-lecturer:</i> prof. A. Zaytsev (a.zaytsev@skoltech.ru)	

## Education

03.2023	<b>Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences [FRC CSC RAS]</b> <i>Dissertation council 24.1.224.01.</i> <u>Defended PhD thesis</u> (candidate of physical and mathematical sciences, 1.2.2 – mathematical modeling, numerical methods, software systems). <i>Scientific advisor:</i> prof. E. Burnaev (e.burnaev@skoltech.ru)	
11.2018 - 10.2022	<b>Skolkovo Institute of Science and Technology [Skoltech/CDS]</b> <i>Ph.D. program in Computational Science and Engineering</i> <u>Prepared PhD thesis:</u> Parametric methods for computing optimal transport maps, distances and barycenters. <i>Scientific advisor:</i> prof. E. Burnaev (e.burnaev@skoltech.ru)	
09.2016 - 06.2018	<b>National Research University Higher School of Economics [HSE/CS/DS]</b> <i>Faculty of Computer Science, Department of Data Science</i> Master, GPA 8.44/10 <u>Thesis:</u> Experts' Aggregating Algorithm for Long-Term Prediction <i>Scientific advisor:</i> prof. E. Burnaev (e.burnaev@skoltech.ru)	

09.2013 - Yandex School of Data Analysis [YSDA]  
05.2016 Department of Data Analysis  
Regular Student, GPA 4.5/5



National Research University  
Higher School of Economics [HSE/Math]  
09.2012 - Faculty of Mathematics  
06.2016 Bachelor, GPA 8.5/10  
Thesis: Local Rules for Self-Similar Tiling of the Plane  
Scientific advisor: prof. N. Vereshchagin



## Extra-Curriculum Courses

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10.2021 **Statistics, Artificial Intelligence, Machine Learning, Probability, Learning Theory Event [SAMPLE 2021]**  
*Russia, Gelendzhik*  
Participation

09.2020 **SMILES Machine Learning Summer School 2020**  
*Online (Zoom)*  
Participation & Poster: Wasserstein-2 Generative Networks

02.2020 **Math of Machine Learning School 2020**  
*Online (Zoom)*  
Participation & Poster: Wasserstein-2 Generative Networks

09.2019 **Machine Learning Summer School 2019 [Skoltech]**  
*Moscow, Russia*  
Participation



## Professional Interests

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1. **Optimal Transport (OT, 2019 - ...)**: computational OT; parametric methods for OT (based on neural networks); computation of Wasserstein distances, maps and barycenters; learning Schrodinger bridges from data; OT for generative modeling, domain adaptation and image processing; generalization & sample complexity.
2. **Generative Models (2019 - ...)**: generative adversarial networks (GANs): discrepancy measures, generalization bounds, approximation properties, methods to deal with the mode dropping & collapse; diffusion models: connections to Schrodinger bridges (Entropic OT), speeding up the inference, theoretical guarantees.
3. **Online Machine Learning (OML, 2017 - 2021)**: prediction with experts' advice; aggregating algorithms; delayed feedback and long-term forecasting; adaptive algorithms; time-series prediction; regret bounds.
4. **Topological Data Analysis (TDA, 2019 - 2021)**: canonical form invariants of objective functions (barcodes); barcodes for analysis of loss surfaces of neural networks; TDA for assessing the quality generative models.

## Published Papers (Part I: Machine Learning)

19×A\* conference papers, 3×Q1 + 1×Q2 journal papers, 5 other papers.

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- [1] Arip Asadulaev, Alexander Korotin, Vage Egiazarian, Petr Mokrov, and Evgeny Burnaev. "Neural Optimal Transport with General Cost Functionals". In: *The Twelfth International Conference on Learning Representations*. 2024. URL: <https://openreview.net/forum?id=gIiz7tBtYZ>.
- [2] Arip Asadulaev, Vitaly Shutov, Alexander Korotin, Alexander Panfilov, Vladislava Kontsevaya, and Andrey Filchenkov. "A Minimalist Approach for Domain Adaptation with Optimal Transport". In: *Conference on Lifelong Learning Agents*. PMLR. 2023, pp. 1009–1024.
- [3] S Barannikov, A Korotin, D Oganessian, D Emtsev, and E Burnaev. "Barcodes as summary of loss function topology". In: *Doklady Rossijskoj akademii nauk. Matematika, informatika, processy upravleniâ* 514.2 (2023), pp. 196–211.
- [4] Serguei Barannikov, Ilya Trofimov, Grigorii Sotnikov, Ekaterina Trimbach, Alexander Korotin, Alexander Filippov, and Evgeny Burnaev. "Manifold Topology Divergence: a Framework for Comparing Data Manifolds." In: *Advances in Neural Information Processing Systems* 34 (2021).

- [5] Milena Gazdieva, Alexander Korotin, Daniil Selikhanovych, and Evgeny Burnaev. “Extremal domain translation with neural optimal transport”. In: *Advances in Neural Information Processing Systems* 36 (2024).
- [6] Nikita Gushchin, Sergei Kholkin, Evgeny Burnaev, and Alexander Korotin. “Light and Optimal Schrödinger Bridge Matching”. In: *Proceedings of the 41st International Conference on Machine Learning*. Ed. by Ruslan Salakhutdinov, Zico Kolter, Katherine Heller, Adrian Weller, Nuria Oliver, Jonathan Scarlett, and Felix Berkenkamp. Vol. 235. Proceedings of Machine Learning Research. PMLR, 21–27 Jul 2024, pp. 17100–17122. URL: <https://proceedings.mlr.press/v235/gushchin24a.html>.
- [7] Nikita Gushchin, Alexander Kolesov, Alexander Korotin, Dmitry P Vetrov, and Evgeny Burnaev. “Entropic neural optimal transport via diffusion processes”. In: *Advances in Neural Information Processing Systems* 36 (2024).
- [8] Nikita Gushchin, Alexander Kolesov, Petr Mokrov, Polina Karpikova, Andrei Spiridonov, Evgeny Burnaev, and Alexander Korotin. “Building the Bridge of Schrödinger: A Continuous Entropic Optimal Transport Benchmark”. In: *Advances in Neural Information Processing Systems* 36 (2024).
- [9] Alexander Kolesov, Petr Mokrov, Igor Udovichenko, Milena Gazdieva, Gudmund Pammer, Evgeny Burnaev, and Alexander Korotin. “Estimating Barycenters of Distributions with Neural Optimal Transport”. In: *Proceedings of the 41st International Conference on Machine Learning*. Ed. by Ruslan Salakhutdinov, Zico Kolter, Katherine Heller, Adrian Weller, Nuria Oliver, Jonathan Scarlett, and Felix Berkenkamp. Vol. 235. Proceedings of Machine Learning Research. PMLR, 21–27 Jul 2024, pp. 25016–25041. URL: <https://proceedings.mlr.press/v235/kolesov24a.html>.
- [10] Alexander Korotin, Vage Egiazarian, Arip Asadulaev, Alexander Safin, and Evgeny Burnaev. “Wasserstein-2 Generative Networks”. In: *International Conference on Learning Representations*. 2021. URL: [https://openreview.net/forum?id=bEoxzW\\_EXsa](https://openreview.net/forum?id=bEoxzW_EXsa).
- [11] Alexander Korotin, Vage Egiazarian, Lingxiao Li, and Evgeny Burnaev. “Wasserstein Iterative Networks for Barycenter Estimation”. In: *Thirty-Sixth Conference on Neural Information Processing Systems*. 2022. URL: <https://openreview.net/forum?id=GiEnzxTnaMN>.
- [12] Alexander Korotin, Nikita Gushchin, and Evgeny Burnaev. “Light Schrödinger Bridge”. In: *The Twelfth International Conference on Learning Representations*. 2024. URL: <https://openreview.net/forum?id=WhZoCLRWYJ>.
- [13] Alexander Korotin, Alexander Kolesov, and Evgeny Burnaev. “Kantorovich Strikes Back! Wasserstein GANs are not Optimal Transport?” In: *Thirty-sixth Conference on Neural Information Processing Systems Datasets and Benchmarks Track*. 2022. URL: <https://openreview.net/forum?id=VtEEpi-dGlt>.
- [14] Alexander Korotin, Lingxiao Li, Aude Genevay, Justin M Solomon, Alexander Filippov, and Evgeny Burnaev. “Do Neural Optimal Transport Solvers Work? A Continuous Wasserstein-2 Benchmark”. In: *Advances in Neural Information Processing Systems* 34 (2021).
- [15] Alexander Korotin, Lingxiao Li, Justin Solomon, and Evgeny Burnaev. “Continuous Wasserstein-2 Barycenter Estimation without Minimax Optimization”. In: *International Conference on Learning Representations*. 2021. URL: <https://openreview.net/forum?id=3tFAs5E-Pe>.
- [16] Alexander Korotin, Daniil Selikhanovych, and Evgeny Burnaev. “Kernel Neural Optimal Transport”. In: *International Conference on Learning Representations*. 2023. URL: [https://openreview.net/forum?id=Zuc\\_MHtUma4](https://openreview.net/forum?id=Zuc_MHtUma4).
- [17] Alexander Korotin, Daniil Selikhanovych, and Evgeny Burnaev. “Neural Optimal Transport”. In: *International Conference on Learning Representations*. 2023. URL: <https://openreview.net/forum?id=d8CBRLWNkqH>.
- [18] Alexander Korotin, Vladimir V’yugin, and Evgenii Burnaev. “Online algorithm for aggregating experts’ predictions with unbounded quadratic loss”. In: *Russian Mathematical Surveys* 75.5 (2020), p. 974.
- [19] Alexander Korotin, Vladimir V’yugin, and Evgeny Burnaev. “Adaptive hedging under delayed feedback”. In: *Neurocomputing* 397 (2020), pp. 356–368.
- [20] Alexander Korotin, Vladimir V’yugin, and Evgeny Burnaev. “Aggregating strategies for long-term forecasting”. In: *Proceedings of the Seventh Workshop on Conformal and Probabilistic Prediction and Applications*. Ed. by Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Evgueni Smirnov, and Ralf Peeters. Vol. 91. Proceedings of Machine Learning Research. PMLR, Nov. 2018, pp. 63–82. URL: <http://proceedings.mlr.press/v91/korotin18a.html>.
- [21] Alexander Korotin, Vladimir V’yugin, and Evgeny Burnaev. “Mixability of integral losses: A key to efficient online aggregation of functional and probabilistic forecasts”. In: *Pattern Recognition* 120 (2021), p. 108175.
- [22] Alexander Korotin, Vladimir V’yugin, and Evgeny Burnaev. “Mixing past predictions”. In: ed. by Alexander Gammerman, Vladimir Vovk, Zhiyuan Luo, Evgueni Smirnov, and Giovanni Cherubin. Vol. 128. Proceedings of Machine Learning Research. PMLR, Sept. 2020, pp. 171–188. URL: <http://proceedings.mlr.press/v128/korotin20a.html>.
- [23] Petr Mokrov, Alexander Korotin, Alexander Kolesov, Nikita Gushchin, and Evgeny Burnaev. “Energy-guided Entropic Neural Optimal Transport”. In: *The Twelfth International Conference on Learning Representations*. 2024. URL: <https://openreview.net/forum?id=d6tUsZeVs7>.

- [24] Petr Mokrov, Alexander Korotin, Lingxiao Li, Aude Genevay, Justin M Solomon, and Evgeny Burnaev. “Large-scale wasserstein gradient flows”. In: *Advances in Neural Information Processing Systems* 34 (2021).
- [25] Litu Rout, Alexander Korotin, and Evgeny Burnaev. “Generative Modeling with Optimal Transport Maps”. In: *International Conference on Learning Representations*. 2022. URL: <https://openreview.net/forum?id=5JdLZg346Lw>.
- [26] Dmitry Smolyakov, Alexander Korotin, Pavel Erofeev, Artem Papanov, and Evgeny Burnaev. “Meta-learning for resampling recommendation systems”. In: *Eleventh International Conference on Machine Vision (ICMV 2018)*. Vol. 11041. International Society for Optics and Photonics. 2019, 110411S.
- [27] Александр Коротин, Владимир Вьюгин, and Евгений Бурнаев. “Агрегирующий алгоритм для долгосрочного прогнозирования”. In: *Сборник трудов 41-ой конференции «Информационные технологии и системы»* (2017). URL: [http://itas2017.iitp.ru/media/papers/1570387691\\_r09qx47.pdf](http://itas2017.iitp.ru/media/papers/1570387691_r09qx47.pdf).

## Accepted papers (in the process of publication)

5×A\* conference papers.

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- [1] Arip Asadulaev, Rostislav Korst, Alexander Korotin, Vage Egiazarian, Andrey Filchenkov, and Evgeny Burnaev. “Rethinking Optimal Transport in Offline Reinforcement Learning”. In: *The Thirty-eighth Annual Conference on Neural Information Processing Systems*. 2024. URL: <https://openreview.net/forum?id=hKl0Kv7pR2>.
  - [2] Milena Gazdieva, Arip Asadulaev, Alexander Korotin, and Evgeny Burnaev. “Light Unbalanced Optimal Transport”. In: *The Thirty-eighth Annual Conference on Neural Information Processing Systems*. 2024. URL: <https://openreview.net/forum?id=co8KZws1YK>.
  - [3] Nikita Gushchin, Daniil Selikhanovych, Sergei Kholkin, Evgeny Burnaev, and Alexander Korotin. “Adversarial Schrödinger Bridge Matching”. In: *The Thirty-eighth Annual Conference on Neural Information Processing Systems*. 2024. URL: <https://openreview.net/forum?id=L3Knnigicu>.
  - [4] Alexander Kolesov, Petr Mokrov, Igor Udovichenko, Milena Gazdieva, Gudmund Pammer, Anastasis Kratsios, Evgeny Burnaev, and Alexander Korotin. “Energy-Guided Continuous Entropic Barycenter Estimation for General Costs”. In: *The Thirty-eighth Annual Conference on Neural Information Processing Systems*. 2024. URL: <https://openreview.net/forum?id=JZHFRLoqDq>.
  - [5] Nikita Kornilov, Petr Mokrov, Alexander Gasnikov, and Alexander Korotin. “Optimal Flow Matching: Learning Straight Trajectories in Just One Step”. In: *The Thirty-eighth Annual Conference on Neural Information Processing Systems*. 2024. URL: <https://openreview.net/forum?id=kqmucDKVcU>.

Papers will be published in the proceedings of NeurIPS-2024.

## Published Papers (Part II: Machine Learning & Data Analysis for Affective computing)

1×Q1 journal paper, 1×Q2 journal paper, 4 other papers during 2019-2021.

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- [1] Simon Abramov, Alexander Korotin, Andrey Somov, Evgeny Burnaev, Anton Stepanov, Dmitry Nikolaev, and Maria Titova. “Analysis of Video Game Players’ Emotions and Team Performance: an eSports Tournament Case Study”. In: *IEEE Journal of Biomedical and Health Informatics* (2021).
  - [2] Nikita Khromov, Alexander Korotin, Andrey Lange, Anton Stepanov, Evgeny Burnaev, and Andrey Somov. “Esports Athletes and Players: a Comparative Study”. In: *IEEE Pervasive Computing* 18.3 (2019), pp. 31–39.
  - [3] Alexander Korotin, Nikita Khromov, Anton Stepanov, Andrey Lange, Evgeny Burnaev, and Andrey Somov. “Towards Understanding of eSports Athletes’ Potentialities: The Sensing System for Data Collection and Analysis”. In: *2019 IEEE SmartWorld, Ubiquitous Intelligence & Computing, Advanced & Trusted Computing, Scalable Computing & Communications, Cloud & Big Data Computing, Internet of People and Smart City Innovation*. IEEE. 2019, pp. 1804–1810.
  - [4] Alexander Korotin, Anton Stepanov, Andrey Lange, Dmitry Nikolaev, Simon Abramov, Nikita Klyuchnikov, Evgeny Burnaev, and Andrey Somov. “Assessment of Video Games Players and Teams Behaviour via Sensing and Heterogeneous Data Analysis: Deployment at an eSports Tournament”. In: *International Summit Smart City 360*. Springer. 2020, pp. 409–421.
  - [5] Anton Stepanov, Andrey Lange, Nikita Khromov, Alexander Korotin, Evgeny Burnaev, and Andrey Somov. “Sensors and Game Synchronization for Data Analysis in eSports”. In: *2019 IEEE 17th International Conference on Industrial Informatics (INDIN)*. Vol. 1. IEEE. 2019, pp. 933–938.
  - [6] Boris B Velichkovsky, Nikita Khromov, Alexander Korotin, Evgeny Burnaev, and Andrey Somov. “Visual Fixations Duration as an Indicator of Skill Level in eSports”. In: *IFIP Conference on Human-Computer Interaction*. Springer. 2019, pp. 397–405.





## Papers under Review & Preprints (Machine Learning)

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- [1] Xavier Aramayo Carrasco, Maksim Nekrashevich, Petr Mokrov, Evgeny Burnaev, and Alexander Korotin. “Uncovering Challenges of Solving the Continuous Gromov-Wasserstein Problem”. In: *arXiv e-prints* (2023), arXiv:2303.
- [2] Milena Gazdieva, Litu Rout, Alexander Korotin, Alexander Filippov, and Evgeny Burnaev. “Unpaired Image Super-Resolution with Optimal Transport Maps”. In: *arXiv preprint arXiv:2202.01116* (2022).
- [3] Nikita Gushchin, David Li, Daniil Selikhanovych, Evgeny Burnaev, Dmitry Baranchuk, and Alexander Korotin. “Inverse Bridge Matching Distillation”. In: *arXiv preprint arXiv:2502.01362* (2025).
- [4] Sergei Kholkin, Ivan Butakov, Evgeny Burnaev, Nikita Gushchin, and Alexander Korotin. “InfoBridge: Mutual Information estimation via Bridge Matching”. In: *arXiv preprint arXiv:2502.01383* (2025).
- [5] Sergei Kholkin, Grigoriy Ksenofontov, David Li, Nikita Kornilov, Nikita Gushchin, Evgeny Burnaev, and Alexander Korotin. “Diffusion & Adversarial Schrödinger Bridges via Iterative Proportional Markovian Fitting”. In: *arXiv preprint arXiv:2410.02601* (2024).
- [6] Alexander Kolesov, Manukhov Stepan, Vladimir V Palyulin, and Alexander Korotin. “Field Matching: an Electrostatic Paradigm to Generate and Transfer Data”. In: *arXiv preprint arXiv:2502.02367* (2025).
- [7] Grigoriy Ksenofontov and Alexander Korotin. “Categorical Schrödinger Bridge Matching”. In: *arXiv preprint arXiv:2502.01416* (2025).
- [8] Mikhail Pershiyanov, Arip Asadulaev, Nikita Andreev, Nikita Starodubcev, Dmitry Baranchuk, Anastasis Kratsios, Evgeny Burnaev, and Alexander Korotin. “Inverse Entropic Optimal Transport Solves Semi-supervised Learning via Data Likelihood Maximization”. In: *arXiv preprint arXiv:2410.02628* (2024).
- [9] Roman Tarasov, Petr Mokrov, Milena Gazdieva, Evgeny Burnaev, and Alexander Korotin. “A Statistical Learning Perspective on Semi-dual Adversarial Neural Optimal Transport Solvers”. In: *arXiv preprint arXiv:2502.01310* (2025).

## Presentations at Scientific Conferences





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<b>07.2024</b> [x2]	<b>The 41st International Conference on Machine Learning [ICML 2024]</b> <i>Vienna, Austria</i> <u>Poster:</u> Light and Optimal Schrödinger Bridge Matching <u>Poster:</u> Estimating Barycenters of Distributions with Neural Optimal Transport	
<b>05.2024</b> [x3]	<b>The 12th International Conference on Learning Representations [ICLR 2024]</b> <i>Vienna, Austria</i> <u>Poster:</u> Light Schrodinger Bridge <u>Poster:</u> Energy-Guided Entropic Neural Optimal Transport <u>Poster:</u> Neural Optimal Transport with General Cost Functionals	
<b>05.2023</b> [x2]	<b>The 11th International Conference on Learning Representations [ICLR 2023]</b> <i>Rwanda, Kigali</i> <u>Spotlight:</u> Neural Optimal Transport <u>Poster:</u> Kernel Neural Optimal Transport	
<b>12.2022</b> [x2]	<b>Neural Information Processing Systems [NeurIPS 2022]</b> <i>Online</i> <u>Poster:</u> Wasserstein Iterative Networks for Barycenter Estimation <u>Poster:</u> Kantorovich Strikes Back! Wasserstein GANs are not Optimal Transport?	

- 04.2022 **The 10th International Conference on Learning Representations [ICLR 2022]**  
*Online (Zoom)*  
Poster: Generative Modeling with Optimal Transport Maps 
- 12.2021 **Neural Information Processing Systems [NeurIPS 2021]**  
*Online (Zoom)*  
Poster: Large-Scale Wasserstein Gradient Flows  
Poster: Do Neural Optimal Transport Solvers Work? A Continuous Wasserstein-2 Benchmark  
Poster: Manifold Topology Divergence: a Framework for Comparing Data Manifolds 
- 05.2021 **The 9th International Conference on Learning Representations [ICLR 2021]**  
*Online (Zoom)*  
Poster: Wasserstein-2 Generative Networks  
Poster: Continuous Wasserstein-2 Barycenter Estimation without Minimax Optimization 
- 12.2020 **11th International Conference on Sensor Systems and Software [EAI S-CUBE 2020]**  
*Online (Zoom)*  
Presentation: Assessment of Video Games Players and Teams Behaviour via Sensing and Data Analysis: Deployment at an eSports Tournament 
- 06.2018 **The 7th Symposium on Conformal and Probabilistic Prediction and Applications [COPA 2018]**  
*Maastricht, The Netherlands*  
Presentation: Aggregating Strategies for Long-term Forecasting 
- 09.2017 **Information Technologies and Systems 2017 [ITaS 2017]**  
*Russia, Ufa*  
Presentation: Aggregation Algorithm for Long-term Prediction 

## Presentations at Scientific Workshops

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- 11.2024 **Fall into ML: conference and school on ML [ML2024]**  
*Moscow, Russia*  
Posters for 8 Core A\* rank papers 
- 11.2023 **Fall into ML: conference and school on ML [ML2023]**  
*Moscow, Russia*  
Presentation & poster: Neural Optimal Transport 
- 11.2022 **Fall into ML: conference and school on ML [ML2022]**  
*Moscow, Russia*  
Presentation & poster: Kantorovich Strikes Back! Wasserstein GANs are not Optimal Transport? 
- 10.2019 **Huawei Machine Learning Workshop 2020**  
*Sochi, Russia*  
Presentation: Generative Models [**Best presentation award**]  
Presentation: AI + IoT for eSports 

## Reviewing for Conferences & Journals

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Since 2020-2021, I regularly do reviews for top Machine Learning/Artificial Intelligence conferences and journals.



In particular, I won the **best reviewer award** at NeurIPS 2022 conference.  
 Since 2024, I serve as a meta-reviewer (area chair) at NeurIPS conference.



## Students under Supervision

Currently, I supervise several **MSc** students.

1. **1st year** (2024-2026): Arseny Ivanov, Vladislav Gromadskii, Tikhon Mavrin, Irina Zabaryanskaya
2. **2nd year** (2023-2025): David Li, Sergey Karpukhin, Sergey Kushneryuk, Roman Tarasov

Also, I co-supervise (some students are supervised jointly with prof. E. Burnaev) several **PhD** students.

1. Nikita Gushchin (**PhD**, 2022-2025): *Efficient methods for solving entropic optimal transport problems*;
2. Milena Gazdieva (**PhD**, 2022-2025): *Parametric methods for computing OT mappings for imaging tasks*;
3. Alexander Kolesov (**PhD**, 2022-2025): *Scalable Generative modeling approaches based on schrodinger bridges*;
4. Petr Mokrov (**PhD**, 2022-2025): *Methods for solving optimal transport problems with general costs*;
5. Igor Udovichenko (**PhD**, 2024-2027): *Scalable methods for optimal transport with applications to time series tasks*;
6. Xavier Aramayo (**PhD**, 2024-2027): *Scalable methods for computing Gromov-Wasserstein Optimal Transport*;
7. Mikhail Persiiianov (**PhD**, 2024-2027): *Scalable methods for inverse optimal transport*;
8. Sergey Kholkin (**PhD**, 2024-2027): *Adversarial generative modeling approaches based on schrodinger bridges*;
9. Grigoriy Ksenofontov (**PhD**, 2024-2027): *Scalable computation methods for schrodinger bridges*;
10. Alexey Leonov (**PhD**, 2024-2027): *Distillation method for diffusion bridges for image super-resolution tasks*;

### MSc Alumni.

1. Sergey Kholkin (**MSc**, 2023-2024): *Optimal Schrödinger Bridge Matching* (Grade: **A**, **Best MSc thesis award**);
2. Maxim Nekrashevich (**MSc**, 2022-2024): *Neural Gromov-Wasserstein Optimal Transport* (Grade: **A**);
3. Nikita Andreev (**MSc**, 2022-2024): *Improving, analyzing and speeding up image-to-image translation models based on Neural Optimal Transport* (Grade: **A**);
4. Kirill Tamogashev (**MSc**, 2022-2024): *Acoustic Style Transfer with Neural Generative Models* (Grade: **A**);
5. Xavier Aramayo (**MSc**, 2022-2024): *Scalable methods for computing entropic Gromov-Wasserstein Optimal Transport* (Grade: **A**);
6. Polina Karpikova (**MSc**, 2022-2023): *Diverse Image Inpainting using Neural Optimal Transport* (Grade: **A**);
7. Nikita Glukhov (**MSc**, 2022-2023): *Optimal Transport for Semi-supervised Data Translation Tasks* (Grade: **A**);

## Results of Participation in Olympiads and Competitions

**2011-2012** **All-Russian School Olympiad in Mathematics**  
 Russia, Smolensk [Final Stage]  
 Result: Prizewinner (Diploma, II-III degree)



**2011-2012** **International Math Tournament of Towns**  
 Russia, Moscow [Final Stage]  
 Result: Prizewinner (Diploma, II degree)



**2010-2011** **All-Russian School Olympiad in Mathematics**  
 Russia, Veliky Novgorod [Final Stage]  
 Result: Prizewinner (Diploma, II-III degree)



**04.2010** **All-Russian Scientific Conference of Young Researchers**  
 "Step into the Future"  
 Russia, Moscow [Final Stage]  
 Presentation: Barycentric Method in Geometric Problems  
 Result: Prizewinner (Diploma, III degree)






## Scholarships & Awards

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2024	<b>Sber scientific award</b> for scientists who have made a significant contribution to the development of science, continue active research activities in Russia and create prospects for future discoveries <i>Awardee</i> (nomination: AI in Science - digital universe)	
2019, 2021, 2024	<b>Yandex Machine Learning Prize [x3]</b> for students delivering cutting-edge research in ML (2019, 2021) for young scientific supervisors in ML (2024) <i>Awardee</i>	
2012-2014	<b>"Alpha Chance" Students' Scholarship</b> for Prizewinners of the All-Russian School Olympiad <i>Awardee</i>	

## Government Awards

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2023	<b>National Award "AI Leaders"</b> Award to young scientists for breakthrough research in the field of artificial intelligence. <i>Awardee</i>	
2011, 2012	<b>Award for Support of Talented Youth in Russia [x2]</b> On the basis of decree No. 325 (April 6, 2006) of the President of Russia <i>Awardee</i>	
2010, 2012	<b>Award of the Governor for Gifted School Students of the Samara Region [x2]</b> <i>Awardee</i>	

## Skills

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### 1. Personal Skills

- Responsibility, perseverance, purposefulness, sociability, leadership.
- The experience of leading the team work.
- The ability to clearly set the task, plan the stages of the solution and its timely submission.
- The desire to regularly read and analyze scientific publications on relevant subjects.

### 2. Scientific Skills

- Information retrieval, knowledge presentation, scientific writing.
- Hypothesis formulation, experiment planning, formulation and proving theorems.

### 3. Mathematical Skills

- Fundamental mathematics:** probability theory, calculus, linear algebra, functional analysis, topology, math logic, geometry, optimal mass transport, etc.
- Computer science:** algorithms, machine learning, bayesian methods, deep learning, generative models, graphical models, convex optimization, computational complexity, online machine learning, social network analysis, topological data analysis, etc.
- Applied Mathematics:** mathematical statistics, econometrics, optimization, etc.

### 4. Programming Skills

- Python & Jupyter:** 6+ year experience of programming, including scientific Python; knowledge and experience in working with base Python libraries:
  - Data mining:** numpy, scipy, matplotlib, seaborn, sympy, pandas, networkx, etc.

- **Machine learning:** sklearn, statsmodels, xgboost, lightgbm, GPy, pyflux, catboost, etc.
- **Deep learning:** pytorch.
- **Images:** PIL (Image), gimpfu, etc.
- **Internet content:** BeautifulSoup, Urllib, etc.
- **Yandex:** MapReduce

(b) **C++:** about 1 year experience of programming in the course of algorithms in Yandex School of Data Analysis in 2014.

#### 5. Other Skills

The ability to describe and visualize any solution via different development tools: LaTeX, Microsoft office, Google Slides, GIMP, InkScape, etc.

### Language Proficiency

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1. **Russian** (Native)
2. **English** (Intermediate/Upper-Intermediate)