

ALEXANDER NIKULIN

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EXPERIENCE

AIRI

Research Scientist

March 2024 – present

Moscow, Russia

- Participated at 1 workshop and 2 full papers accepted to the A* conferences (ICML, ICLR, NeurIPS).
- Main developer and maintainer of the [XLand-MiniGrid](#) library, currently the only JAX-accelerated environment for meta-reinforcement learning. By moving the computation entirely to the GPU, it significantly accelerates the research process, reducing training times from days to minutes.
- Led the creation of [XLand-100B](#), the largest in-context reinforcement learning dataset to date.

Tinkoff

Research Scientist

Sep 2022 – May 2024

Saint Petersburg, Russia

- Participated at 5 workshop and 4 full papers accepted to the A* conferences (ICML, ICLR, NeurIPS).
- First author paper on [SAC-RND](#) algorithm (accepted to the ICML 2023) was covered by all major Russian news media. Was awarded with [Yandex ML Prize](#) (Ilya Segalovich Award) in the *First publication* nomination.
- Main developer and maintainer of the [CORL](#) library, which currently has over 1k+ stars on the GitHub and has become one of the most popular libraries for offline reinforcement learning. Technical paper describing the main results and philosophy of the library has been accepted at NeurIPS 2023.
- Actively attended meetups and conferences, presenting research accomplishments. Presented [CORL](#) library at PyCon Russia 2023 (rated top 8 out of 25+ by the attendees). Presented [CORL](#) & [SAC-RND](#) at the meetups organized by Tinkoff. Gave over 8 talks on my research to university students from three cities (Moscow, St Petersburg, Kazan). Organized several internal research reading clubs for colleagues. Gave several interviews about my work for [Tinkoff Magazine](#), [vc.ru](#) and others.

Tinkoff

Research Scientist Intern

January 2022 – Sep 2022

Saint Petersburg, Russia

- Conducted the research on the offline reinforcement leaning under the supervision of [Vladislav Kurenkov](#). Publicly [presented](#) the results of the internship at the Innopolis University.
- Proposed and verified more than 5 research proposals during the internship. One of them was accepted to the 3rd Offline Reinforcement Learning Workshop at NeurIPS 2022.

JetBrains Research

Research Assistant

March 2021 – December 2021

Saint Petersburg, Russia

- Worked on a [Improving Upside Down RL](#) coursework under supervision of [Oleg Svidchenko](#). Developed most of the infrastructure for conducting experiments and training in PyTorch. Tested various modifications of the Soft Actor-Critic algorithm in the Upside Down RL setting.
- Participated in the MineRL 2021 competition, taking 5th place as well as receiving a \$200 award for the community support nomination. As a result, our approach was described in the [paper](#) accepted to NeurIPS 2021.

Hamburg University of Technology

Research Assistant

March 2021 – Sep 2021

Saint Petersburg, Russia

- Worked on metamaterials design with generative models under supervision of [Alexander Itin](#). Developed most of the infrastructure for conducting experiments and training in PyTorch. Designed and performed the main experiments. Achieved an average threefold improvement over baselines on a variety of metrics. Results were published in the [Photonics and Nanostructures](#) journal.

VK

Machine Learning Engineer Intern

July 2019 – Sep 2019

Saint Petersburg, Russia

- Wrote a pipeline for the training of graph embeddings using ALS (on millions of nodes) and top-n recommendations of the most similar users using distributed kNN search. The results were tested with an A/B test.
- For the correct sampling of the graph and the tuning of the hyperparameters, also wrote my own [implementation of the Metropolis-Hastings](#) random walk on pyspark.

SELECTED PUBLICATIONS

In-Context Reinforcement Learning for Variable Action Spaces

Viacheslav Sinii, [Alexander Nikulin](#), Vladislav Kurenkov, Ilya Zisman, Sergey Kolesnikov

ICML, 2024

Poster

Emergence of In-Context Reinforcement Learning from Noise Distillation

Ilya Zisman, Vladislav Kurenkov, [Alexander Nikulin](#), Viacheslav Sinii, Sergey Kolesnikov

ICML, 2024

Poster

Anti-Exploration by Random Network Distillation

[Alexander Nikulin](#), Vladislav Kurenkov, Denis Tarasov, Sergey Kolesnikov

ICML, 2023

Poster

Revisiting the Minimalist Approach to Offline Reinforcement Learning

Denis Tarasov, Vladislav Kurenkov, [Alexander Nikulin](#), Sergey Kolesnikov

NeurIPS, 2023

Poster

CORL: Research-oriented Deep Offline Reinforcement Learning Library

Denis Tarasov*, [Alexander Nikulin](#)*, Dmitry Akimov, Vladislav Kurenkov, Sergey Kolesnikov

NeurIPS, 2023

Poster

Katakomba: Tools and Benchmarks for Data-Driven NetHack

Vladislav Kurenkov*, [Alexander Nikulin](#)*, Denis Tarasov, Sergey Kolesnikov

NeurIPS, 2023

Poster

EDUCATION

Moscow Institute of Physics and Technology

PhD in Computer Science

Sep 2023 – present

Moscow, Russia

National Research University Higher School of Economics

Master of Science in Computer Science

Sep 2020 – May 2023

Saint Petersburg, Russia

National Research University Higher School of Economics

Bachelor of Science in Sociology

Sep 2016 – May 2020

Saint Petersburg, Russia