

Dmitrii I. Krylov

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EDUCATION

University of California, Irvine (UCI)
PhD in Computer Science (en route MSc)

September 2021 – January 2026
Irvine

Skolkovo Institute of Science and Technology (Skoltech)
MSc in Data Science, Summa cum laude

September 2018 – August 2020
Moscow

Moscow Engineering Physics Institute (MEPhI)
BSc in Information Systems and Technologies

September 2014 – August 2018
Moscow

RESEARCH EXPERIENCE

Graduate Researcher at IndyLab,
UC Irvine,

Jan 2022 – Current
Irvine,

- Designed a memory-efficient DNN training algorithm (**Moonwalk**) that **reduced GPU memory usage by 50%**, enabling larger-batch training and faster convergence.
- Led an RL project, **mentoring two undergraduate students** in hierarchical imitation learning.
- Published two first-author papers (ICML submission under review) and collaborated on multiple **cross-disciplinary research projects** in deep learning and efficient ML.

ML Engineer Intern at Stripe,
Stripe - Merchant Intelligence,

June 2025 – Sep 2025
New York, NY

- Built and deployed **LLM-powered agents** for **merchant intelligence**, with applications in Smart Dispute Resolution and merchant defense.
- Developed an **LLM + XGBoost hybrid system** to predict dispute outcomes, improving accuracy of win/loss forecasts for merchants.

ML Research Intern at Duolingo,
Duolingo,

June 2024 – Sep 2024
Pittsburgh,

- **Evaluated** sequence models (**Transformers, XLSTM, Mamba**) on a dataset of **10M+ users** for long-term knowledge tracing.
- **Optimized** training efficiency, aiming to **reduce computational cost by 10×** through **time-sequence batching** and efficient memory management.
- **Developed** a synthetic dataset for tracking long-term dependencies and introduce a novel evaluation metric for **measuring model performance over extended time horizons**.

ML Research Intern at Alpha Profit Group,
Alpha Profit Group,

June 2023 – Aug 2023
Remote,

- **Explored** reinforcement learning (RL) for portfolio optimization, designing and training **custom Gym environments** for backtesting trading strategies.
- **Optimized** an RL-based algorithm for **high-frequency trading**, reducing execution latency and increasing strategy stability.
- **Developed** a workflow for **hypothesis-driven strategy testing**, streamlining evaluation and parameter tuning.

Graduate Researcher at Computational Imaging Group,
Skolkovo Institute of Science and Technology,

Jan 2019 – Aug 2020
Moscow,

- **Built** ML models in **C++ and Python** for simulating **oscillating networks** in deep brain stimulation applications.
- **Ran large-scale experiments** on a Skoltech **high-performance computing cluster**, conducting over **1,000 RL simulations** for algorithm benchmarking.

ML Research Intern at NVIDIA,
NVIDIA,

June 2019 – Aug 2019
Moscow,

- **Designed** and trained deep learning models to **predict cloud gaming stream quality** for **GeForce Now**, improving prediction accuracy by **15%**.

- Developed multi-GPU training pipelines using **PyTorch and Horovod**, enabling efficient distributed training across **4+ GPUs**.
- Automated the data collection and retraining workflow, reducing **manual intervention** and enhancing model scalability.

Undergraduate ML Researcher at The Kurchatov Institute,

May 2017 – Aug 2018

The Kurchatov Institute,

Moscow,

- Applied machine learning to analyze **human gaze movement patterns**, performing **clustering and exploratory data analysis (EDA)** on eye-tracking data.
- Developed custom **C++ and Python** algorithms (SURF-based and proprietary) for **aggregating gaze patterns** across multiple sessions.
- Collected and processed real-time eye-tracking data, extracting key insights for cognitive science research.

PUBLICATIONS

Publications

1. Dmitrii Krylov Dmitry V Dylov Maksim Bobrin, Nazar Buzun, Align your intents: Offline imitation learning via optimal transport, in *In review NIPS 2025*.
2. Roy Fox Dmitrii Krylov, Armin Karamzade, Moonwalk: Inverse-forward differentiation, in *In review NIPS 2025*.
3. Dmitrii Krylov, Learning to design analog circuits to meet threshold specifications, in *International Conference on Machine Learning, ICML-23*.
4. Dmitrii Krylov, Remi Tachet des Combes, Romain Laroche, Michael Rosenblum, and Dmitry V. Dylov, Reinforcement learning framework for deep brain stimulation study, in *International Joint Conference on Artificial Intelligence, IJCAI-20*, pp. 2847–2854, <https://doi.org/10.24963/ijcai.2020/39> (2020), <https://doi.org/10.24963/ijcai.2020/394>.
5. Dmitrii Krylov, Dmitry V. Dylov, and Michael Rosenblum, Reinforcement learning for suppression of collective activity in oscillatory ensembles, *Chaos: An Interdisciplinary Journal of Nonlinear Science* **30**, 033126 (2020), <https://doi.org/10.1063/1.5128909>, (2020) .
6. Dmitrii Krylov and Alexei V. Samsonovich, Designing an emotionally-intelligent assistant of a virtual dance creator, in *Biologically Inspired Cognitive Architectures 2018* (Springer International Publishing) pp. 197–202, https://doi.org/10.1007/978-3-319-99316-4_26, (2018).

SKILLS

Programming: Python, C++, C, SQL, Bash, MATLAB

Machine Learning: Deep Learning, Reinforcement Learning, Imitation Learning, Knowledge Tracing, Large-Scale ML

Frameworks & Libraries: PyTorch, TensorFlow, JAX, scikit-learn, XGBoost, CatBoost, Horovod, Gym, Hugging Face, OpenCV

Cluster Computing: SLURM, HPC clusters, multi-GPU distributed training, Horovod, DDP (Distributed Data Parallel)

Cloud & DevOps: Docker, Kubernetes, Git, NGINX, AWS EC2, Google Cloud, Ray

LLMs: Training and fine-tuning XLSTM, Mamba, Transformer-based models, LLaMA, GPT-based architectures

SELECTED HONORS AND AWARDS

Jane Street / GPUMode (50000\$ hackathon 1st place)	Sep 2025
HPI Fellowship	Jan 2024 - Jan 2026
Research Grant Funding	Jan 2021
Skoltech Excellence Scholarship	March 2019 - Aug 2020
MEPhI Excellence Scholarship	Sep 2014
Federal Excellence Scholarship	July 2014
McKinsey Data Science hackathon, 2nd place	Sep 2019
Russian AI cup (Artificial Intelligence International Championship) Semi-Finalist	Nov 2020