

# NIKITA KALININ

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## EDUCATION

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### INSTITUTE OF SCIENCE AND TECHNOLOGY AUSTRIA (ISTA)

*PhD program in Machine Learning*

Vienna, Austria

Sep 2022 – present

• **Courses:** Modern Machine Learning, An Introduction to Stochastic Equations, Monte Carlo Methods in Statistical Physics, Selected Topics in Mathematical Physics, Selected Topics in Statistical Physics, Algorithms with Differential Privacy, Extremal Graph Theory, Dynamical Systems

### NRU HIGHER SCHOOL OF ECONOMICS

*BS in Computer Science GPA 9.12/10*

Moscow, Russia

Sep 2018 – May 2022

### YANDEX SCHOOL OF DATA ANALYSIS

*Master's-level program in Data Science GPA 4.93/5*

Moscow, Russia

Sep 2019 – May 2021

• **Courses:** Algorithms and Data Structures, Advanced Linear Algebra, Python, Machine Learning, Natural Language Processing, Computer Vision, Applied statistics for machine learning, Convex analysis and optimization, Deep learning, Reinforcement learning, Deep Bayesian Methods, Information Theory, Stochastic Models, Game Theory

### UNIVERSITY OF HELSINKI

*Exchange students program in Computer Science master program*

Helsinki, Finland

Jan 2021 – Jun 2021

## WORK & RESEARCH EXPERIENCE

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### Institute of Science and Technology Austria (ISTA)

*PhD student in Machine Learning and Computer Vision Group supervised by Christoph Lampert*

Sep 2022 - present

- Wrote a paper on efficient mean estimation from Gaussian distribution in Local Differential Privacy
- Working on the project of optimal matrix factorization for private Federated Learning

### Huawei Moscow Research Center

*Engineer in Computer Vision Laboratory*

Sep 2021 - Aug 2022

- Improved autonomous vehicles motion forecasting models for Argoverse competition
- Developed the solution for the project of Autonomous vehicle parking via Reinforcement Learning

### Institute of Science and Technology Austria (ISTA)

*Scientific summer intern in the group of Machine Learning and Information Theory*

June 2021 - Sep 2021

- Used Rate-distortion theory to find the Shannon Lower Bound for the distributions of weights and gradients
- Applied Mean-field theory to the problem of asymptotic Neural Network gradients independence
- Compared different gradients compression algorithms

### Laboratory of Methods for Big Data Analysis (LAMBDA) HSE

*Scientific intern on the project of inference of molecular interaction potential with machine learning*

Oct 2020 - May 2021

- Compared several active learning models for Graph Neural Networks in the context of molecular potential prediction
- Trained Graph Neural Networks with jax-md workflow

### Yandex

*Machine learning developer intern in Media services*

Jul 2020 - Oct 2020

- Trained Pairwise Classification Models
- Searched for optimal hyperparameters using Bayesian inference
- Developed new features for increasing ranking model quality

## PUBLICATIONS

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Kalinin, Nikita, Steinberger, Lukas. "Efficient Estimation of a Gaussian Mean with Local Differential Privacy." arXiv preprint arXiv:2402.04840 (2024).

## TECHNICAL SKILLS

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**Python Stack:** PyTorch, Scikit-learn, Jax, TensorFlow, Keras, Pandas, Matplotlib, XGBoost

**Other:** C/C++, SQL, LaTeX, basics of R

## LANGUAGES

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Russian (native), English C1 (IELTS 7.5), German B1

## ACHIEVEMENTS

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First Prize of International Math Competition (IMC 2020)

Third Prize of ICPC Moscow Regional Contest 2020

Silver medal of Putnam Mirror Competition 2019

Silver medal of Romanian Masters of physics 2017 as a part of national team

Twice a winner of the Segalovich Scholarship for academic achievements (2019, 2020)