

Ivan Sergeev

✉ ivan.sergeev@ist.ac.at | [in linkedin.com/in/the-ivan-sergeev](https://www.linkedin.com/in/the-ivan-sergeev)
🔗 scholar.google.com/citations?user=zsNPYh8AAAAAJ



Experience

Postdoctoral Researcher

Institute of Science and Technology Austria (ISTA), Austria
Prof. Vladimir Kolmogorov's group

Mar 2024 – Present

Research Assistant

ETH Zürich, Switzerland

Apr 2020 – Dec 2023

- Designed approximation algorithms for online optimization problems
- Published research papers, presented results at international conferences

Teaching Assistant

ETH Zürich, Switzerland

Sep 2019 – Dec 2023

- Supervised student projects: semester papers, bachelor theses, master theses
- Coordinated TA teams, designed course materials, taught classes

Education

DrSc in Mathematics

ETH Zürich, Switzerland

Thesis: “*Constant-Competitive Online Selection Algorithms with Almost no Prior Information*”

Advisor: Prof. Dr. Rico Zenklusen

Apr 2020 – Dec 2023

MSc in Applied Mathematics

ETH Zürich, Switzerland

Thesis: “*On Contention Resolution for the Hypergraph Matching, Knapsack, and k -Column Sparse Packing Problems*”

Advisors: Prof. Dr. Rico Zenklusen, Dr. Haris Angelidakis

Sep 2018 – Mar 2020

GPA: 5.8/6.0, graduated with honors

BSc in Applied Mathematics and Physics

Moscow Institute of Physics and Technology, Russia

Thesis: “*Quantum Channels with Constant Entropy and Matrix Norms in Dimensions 2 and 3*”

Advisor: Prof. Grigori Amosov

Sep 2014 – Aug 2018

GPA: 9.5/10.0, graduated with honors

Skills

- Python, C, C++, Wolfram Mathematica, Rust, Java
- Git, LaTeX, Microsoft Office, LibreOffice, Zoom
- English (fluent, C2), German (fluent, C1), French (basic, A2), Russian (native)

Competitions

Russian National Competition for School Students

Participated in the final stage in Physics

2013, 2014

Participated in the final stage in Informatics

2012, 2013

Singapore International Mathematics Challenge 2012

May 21 – 25, 2012

Received a Commendation Award

Programming Projects

UN PET Lab Hackathon

Nov 09, 2022

Hosted by ETH AI Center, ETH Zürich, Switzerland

Applied synthetic data generation in Python to a differential privacy setting with secure enclaves

BETH Hackathon

Feb 11 – 15, 2019

Hosted by the Chair of Computational Social Sciences, ETH Zürich, Switzerland

Developed a distributed application for exchanging favors using Ethereum smart contracts

Project on GitHub: <https://github.com/Ivan-Sergeyev/FAVOR>

Android App “The Hat”

Jul 28 – Aug 17, 2013

Summer Informatics School, Russia

Developed an Android client for “The Hat” word game in Python using Kivy

Updated client on GitHub: <https://github.com/nzinov/beret>

Publications

1. **Research paper** “*Constant-Competitiveness for Random Assignment Matroid Secretary Without Knowing the Matroid*”, with Richard Santiago and Rico Zenklusen, In *Proceedings of the 24th Conference on Integer Programming and Combinatorial Optimization (IPCO '23)*, pp. 423–437, 2023. doi:10.1007/978-3-031-32726-1_30
2. **Research paper** “*Simple Random Order Contention Resolution for Graphic Matroids with Almost no Prior Information*”, with Richard Santiago and Rico Zenklusen, In *Proceedings of the 2023 Symposium on Simplicity in Algorithms (SOSA '23)*, pp. 84–95, 2023. doi:10.1137/1.9781611977585.ch8
3. **Educational aid** “*Pseudo-Differential Operators*”, with Andronick Arutyunov, MIPT, 2021.
4. **Semester paper** “*Equivalence of the Catalytic Entropy Conjecture and the Transitivity Conjecture is Plausible*”, advisors: Prof. Dr. Renato Renner and Dr. Henrik Wilming, ETH Zürich, 2019.
5. **Research paper** “*Generalizations of 2-Dimensional Diagonal Quantum Channels with Constant Frobenius Norm*”, Reports on Mathematical Physics, 83:3, pp. 349–372, 2019. doi:10.1016/S0034-4877(19)30055-2
6. **Research project** “*Solutions of the Yang–Baxter Equation with Exceptional Lie Group Symmetry*”, advisor: Prof. Alexey Isaev, completed during the Summer Student Program at the Joint Institute for Nuclear Research, 2017.
7. **Student paper** “*Performance Comparison of Numeric Algorithms for Solving Linear Systems of Algebraic Equations*”, with Ilya Fedorov, advisor: Dr. Alena Favorskaya, presented at the 59th MIPT Scientific Conference, 2016.