

# Aleksandr Bogdanov

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## Education

### Physics and Mathematics Lyceum №239

Secondary School

Saint-Petersburg, Russia

Sept 2013 - June 2020

- Weighted GPA on five-point scale: 4.71
- 5 Olympiad RSCO by mathematics and 4 Olympiad RSCO by physics

### Moscow Institute of Physics and Technology (MIPT)

B.S. in Applied Mathematics and Physics

Moscow, Russia

Sept 2020 - June 2024

- Phystech-School of Applied Mathematics and Computer Science, direction «Applied mathematics and physics»
- Department of Intelligent Systems
- Weighted GPA on ten-point scale: 8.71
- Graduate qualification paper on «Gradient approximation using zero-order oracle and memorisation techniques».
- Red Diploma

### Moscow Institute of Physics and Technology (MIPT)

M.S. in Computer Science and Engineering

Moscow, Russia

Sept 2024 - Present

- Phystech-School of Applied Mathematics and Computer Science, direction «Computer Science and Engineering»
- Department of Mathematical Fundamentals of Control
- Weighted GPA on ten-point scale: 9.50

### Yandex School of Data Analysis

Additional education

Moscow, Russia

Sept 2023 - June 2025

- Specialization «Machine learning developer»
- Weighted GPA on five-point scale: 4.08

## Work Experience

### Laboratory of Mathematical Methods of Optimization (MIPT)

Research Scientist and Operations Manager

Moscow, Russia

Au 2023 - Dec 2024

- Writing research papers about mathematical methods of optimization
- Various managerial jobs

### Laboratory of Fundamental Research MIPT - Yandex (MIPT)

Research Scientist

Moscow, Russia

Au 2023 - Dec 2024

- Writing research papers about mathematical methods of optimization

### Yandex.Research (Yandex)

Research Scientist

Moscow, Russia

Au 2024 - June 2025

- Writing research papers on mathematical methods of optimization and machine learning

### Moscow State University (MSU)

Teacher

Moscow, Russia

Feb 2025 - June 2025

- Teacher (2025y) at the course «Optimization Methods»

### Laboratory of Fundamental Machine Learning Research (MIPT)

Research Scientist and Operations Manager

Moscow, Russia

Jan 2024 - Present

- Writing research papers about mathematical methods of optimization
- Various managerial jobs

### Department of Mathematical Fundamentals of Control (MIPT)

Lead, Teacher and Assistant

Moscow, Russia

Sept 2022 - Present

- Assistant (2022y) at the course «Theory and Implementation of Programming Languages»
- Assistant (2023y) at the course «Algorithms and Models of Computation»
- Assistant (2023y) at the course «Theory of algorithms and models of computation»
- Assistant (2024y) at the course «Optimization Methods»
- Assistant (2025y) at the course «Reinforcement learning»
- Teacher (2024y-2025y) at the course «Optimization Methods»
- Senior teacher (2025y) at the course «Optimization Methods»
- Lead (2024y-2025y) at the course «Optimization Methods»

## Central University (CU)

Lead, Author, Senior Assistant

Moscow, Russia

Sept. 2024 - Present

- Senior Assistant (2024y) at the course «Linear Algebra»
- Senior Assistant (2025y) at the course «Discrete Mathematics»
- Senior Assistant (2025y) at the course «Optimization Methods»
- Teacher (2025y) at the course «Optimization Methods»
- Author (2025y) at the course «Optimization Methods»
- Lead (2025y) at the course «Optimization Methods»

## Projects

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### SQL-database «Canteen»

Moscow, Russia

Moscow Institute of Physics and Technology

Sept 2020 - Dec 2021

- Creating my own SQL-database for the Canteen in MS SQL

### Quantisation

Moscow, Russia

Yandex.Research

June 2024 - Present

- Research paper about quantisation

## Publications

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### ARTICLES

New aspects of black box conditional gradient: Variance reduction and one point feedback

Andrey Veprikov, Aleksandr Bogdanov, Vladislav Minashkin, Aleksandr Beznosikov

*Chaos, Solitons & Fractals (Q1)* 189 (2024) p. 115654. 2024

### CONFERENCES

Application of zero-order stochastic approximation with memoisation technique in the Frank-Wolfe algorithm

Aleksandr Bogdanov, Andrey Veprikov, Vladislav Minashkin, Aleksandr Beznosikov

66 conference MIPT, 2024

## Research visits

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### Management, information and optimisation named after B. T. Polyak

Nizhny Novgorod, Russia

MIPT, HSE, MSU, Wildberries

July 2023

- School on Optimisation Methods and Machine Learning, where the development of Boris Theodorovich Polyak's ideas in modern science was discussed

### Management, information and optimisation named after B. T. Polyak

Novosibirsk, Russia

MIPT, HSE, MSU, RRI

July 2024

- School on Optimisation Methods and Machine Learning, where the development of Boris Theodorovich Polyak's ideas in modern science was discussed

## Skills

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	<ul style="list-style-type: none"> <li>• Machine learning</li> <li>• Reinforcement learning</li> <li>• Time series</li> <li>• Bayesian learning</li> <li>• Recommendation Systems</li> </ul>
<b>Machine learning</b>	<ul style="list-style-type: none"> <li>• Computer vision</li> <li>• Natural Language Processing</li> <li>• Generative models</li> <li>• Self-Driving Cars</li> <li>• Speech technology</li> <li>• Graph models</li> </ul>
<b>Programming</b>	C/C++, Python, GO, SQL, assembler
<b>Miscellaneous</b>	Linux, $\text{\LaTeX}$ , Microsoft Office, Git
	<ul style="list-style-type: none"> <li>• Numerical optimization</li> <li>• Probability theory</li> </ul>
<b>Math</b>	<ul style="list-style-type: none"> <li>• Linear algebra</li> <li>• Mathematical analysis</li> <li>• Mathematical statistics</li> </ul>
<b>Languages</b>	English (C1), Russian (Mothertongue)

## Achievements

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2022	<b>Scholarship</b> , Excellent grades scholarship	MIPT
2022-2023	<b>Scholarship</b> , Abramov scholarship	MIPT
2024	<b>Scholarship</b> , Rudakov scholarship	MIPT
2024	<b>Red diploma</b> , Red bachelor's diploma	MIPT
2024-2025	<b>Scholarship</b> , Contribution to the development of numerical methods of optimization	MIPT
2024-2025	<b>Scholarship</b> , Enhanced state academic scholarship	MIPT
2025	<b>Reward</b> , Yandex ML Prize	MIPT