

# Dmitry Kovalev

## PERSONAL DATA

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GOOGLE SCHOLAR <https://scholar.google.com/citations?user=qHFA5z4AAAAJ>

## EDUCATION

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2014-2018 BS in Applied Mathematics and Physics  
**Moscow Institute of Physics and Technology**, Dolgoprudny, Russia  
Advisor: [Alexander Gasnikov](#)  
2018-2019 MS in Computer Science  
**King Abdullah University of Science and Technology**, Thuwal, Saudi Arabia  
Advisor: [Peter Richtárik](#)  
2018-2021 MS in Applied Mathematics and Physics  
**Moscow Institute of Physics and Technology**, Dolgoprudny, Russia  
Advisor: [Alexander Gasnikov](#)  
2019-Now PhD in Computer Science  
**King Abdullah University of Science and Technology**, Thuwal, Saudi Arabia  
Advisor: [Peter Richtárik](#)

## AWARDS

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2021 **CEMSE Research Excellence Award**, King Abdullah University of Science and Technology  
2021 **Best Student Paper Award**, FL-ICML 2021 Workshop  
2021 **Ilya Segalovich Scientific Prize**, Yandex  
2021 **PhD progress marked as Outstanding**, King Abdullah University of Science and Technology  
2020 **Ilya Segalovich Scientific Prize**, Yandex  
2018 **Dean's Award**, King Abdullah University of Science and Technology  
2015-2017 **Abramov's Fund Scholarship**, Moscow Institute of Physics and Technology  
2014 **Asian Physics Olympiad (APhO), Honourable Mention**, Singapore  
2014 **All-Russian School Physics Olympiad, Final Round Prize-Winner**, Saint-Petersburg  
2014 **All-Russian School Programming Olympiad, Region Round Winner**, Moscow  
2014 **All-Russian School Math Olympiad, Region Round Winner**, Moscow  
2012-2014 **Russian President's Scholarship for High School Students**  
2012-2014 **Moscow Governor's Scholarship for High School Students**  
2013 **All-Russian School Physics Olympiad, Final Round Winner**, Vladivostok  
2012 **All-Russian School Physics Olympiad, Final Round Prize-Winner**, Saransk

## RESEARCH INTERESTS

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Optimization Algorithms  
Distributed Optimization  
Machine Learning

## SKILLS

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PROGRAMMING C/C++, Python; PAST EXPERIENCE: Go, C#, VB.NET, SQL, Julia  
COMPUTER macOS, LaTeX, Git  
MATHEMATICS Calculus, Linear Algebra, Probability and Statistics, Convex Analysis

## LANGUAGES

ENGLISH    Advanced Knowledge  
RUSSIAN    Mothertongue

## PUBLICATIONS

1. **Lower Bounds and Optimal Algorithms for Smooth and Strongly Convex Decentralized Optimization Over Time-Varying Networks** (Dmitry Kovalev, Elnur Gasanov, Peter Richtarik, Alexander Gasnikov), *NeurIPS 2021*
2. **An Optimal Algorithm for Strongly Convex Minimization under Affine Constraints** (Adil Salim, Laurent Condat, Dmitry Kovalev, Peter Richtarik), *AISTATS 2022*
3. **ADOM: Accelerated Decentralized Optimization Method for Time-Varying Networks** (Dmitry Kovalev, Egor Shulgin, Peter Richtarik, Alexander Rogozin, Alexander Gasnikov), *ICML 2021*
4. **IntSGD: Floatless Compression of Stochastic Gradients** (Konstantin Mishchenko, Bokun Wang, Dmitry Kovalev, Peter Richtarik), *ICLR 2022*
5. **A Linearly Convergent Algorithm for Decentralized Optimization: Sending Less Bits for Free!** (Dmitry Kovalev, Anastasia Koloskova, Martin Jaggi, Peter Richtarik, Sebastian U. Stich), *AISTATS 2021*
6. **Linearly Converging Error Compensated SGD** (Eduard Gorbunov, Dmitry Kovalev, Dmitry Makarenko, Peter Richtarik), *NeurIPS 2020*
7. **Optimal and Practical Algorithms for Smooth and Strongly Convex Decentralized Optimization** (Dmitry Kovalev, Adil Salim, Peter Richtarik), *NeurIPS 2020*
8. **From Local SGD to Local Fixed Point Methods for Federated Learning** (Grigory Malinovsky, Dmitry Kovalev, Elnur Gasanov, Laurent Condat, Peter Richtarik), *ICML 2020*
9. **Acceleration for Compressed Gradient Descent in Distributed and Federated Optimization** (Zhize Li, Dmitry Kovalev, Xun Qian, Peter Richtarik), *ICML 2020*
10. **Variance Reduced Coordinate Descent with Acceleration: New Method With a Surprising Application to Finite-Sum Problems** (Filip Hanzely, Dmitry Kovalev, Peter Richtarik), *ICML 2020*
11. **Stochastic Newton and Cubic Newton Methods with Simple Local Linear-Quadratic Rates** (Dmitry Kovalev, Konstantin Mishchenko, Peter Richtarik), *NeurIPS 2019 Workshop*
12. **Stochastic Proximal Langevin Algorithm: Potential Splitting and Nonasymptotic Rates** (Adil Salim, Dmitry Kovalev, Peter Richtarik), *NeurIPS 2019*
13. **Revisiting Stochastic Extragradient** (Konstantin Mishchenko, Dmitry Kovalev, Egor Shulgin, Peter Richtarik, Yura Malitsky), *AISTATS 2020*
14. **RSN: Randomized Subspace Newton** (Robert M. Gower, Dmitry Kovalev, Felix Lieder, Peter Richtarik), *NeurIPS 2019*
15. **Don't Jump Through Hoops and Remove Those Loops: SVRG and Katyusha are Better Without the Outer Loop** (Dmitry Kovalev, Samuel Horvath, Peter Richtarik), *ALT 2020*
16. **A hypothesis about the rate of global convergence for optimal methods (Newton's type) in smooth convex optimization** (Alexander Gasnikov, Dmitry Kovalev), *Computer Research and Modeling*
17. **Stochastic Spectral and Conjugate Descent Methods** (Dmitry Kovalev, Eduard Gorbunov, Elnur Gasanov, Peter Richtarik), *NeurIPS 2018*

## PREPRINTS

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1. **Optimal Algorithms for Decentralized Stochastic Variational Inequalities** (Dmitry Kovalev, Aleksandr Beznosikov, Abdurakhmon Sadiev, Michael Persiianov, Peter Richtarik, Alexander Gasnikov), *arXiv preprint (February 2022)*
2. **Accelerated Primal-Dual Gradient Method for Smooth and Convex-Concave Saddle-Point Problems with Bilinear Coupling** (Dmitry Kovalev, Alexander Gasnikov, Peter Richtarik), *arXiv preprint (December 2021)*
3. **Near-Optimal Decentralized Algorithms for Saddle Point Problems over Time-Varying Networks** (Aleksandr Beznosikov, Alexander Rogozin, Dmitry Kovalev, Alexander Gasnikov), *arXiv preprint (July 2021)*
4. **Decentralized Distributed Optimization for Saddle Point Problems** (Alexander Rogozin, Alexander Beznosikov, Darina Dvinskikh, Dmitry Kovalev, Pavel Dvurechensky, Alexander Gasnikov), *arXiv preprint (February 2021)*
5. **Towards Accelerated Rates for Distributed Optimization over Time-varying Networks** (Alexander Rogozin, Vladislav Lukoshkin, Alexander Gasnikov, Dmitry Kovalev, Egor Shulgin), *arXiv preprint (September 2020)*
6. **Fast Linear Convergence of Randomized BFGS** (Dmitry Kovalev, Robert M. Gower, Peter Richtarik, Alexander Rogozin), *arXiv preprint (February 2020)*
7. **Distributed Fixed Point Methods with Compressed Iterates** (Selim Chraibi, Ahmed Khaled, Dmitry Kovalev, Peter Richtarik, Adil Salim, Martin Takac), *arXiv preprint (December 2019)*
8. **Accelerated methods for composite non-bilinear saddle point problem** (Mohammad Alkousa, Darina Dvinskikh, Fedor Stonyakin, Alexander Gasnikov, Dmitry Kovalev), *arXiv preprint (December 2019)*
9. **Stochastic Distributed Learning with Gradient Quantization and Variance Reduction** (Samuel Horvath, Dmitry Kovalev, Konstantin Mishchenko, Peter Richtarik, Sebastian U. Stich), *arXiv preprint (April 2019)*

Last Updated on March 23, 2022