Dmitry **Kovalev**

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Education

King Abdullah University of Science and Technology	*Thuwal, Saudi Arabia*
PhD in Computer Science	*Jan. 2020 - PRESENT*
Moscow Institute of Physics and Technology	*Moscow, Russia*
MS in Applied Mathematics and Physics	*Sep. 2018 - Jun. 2021*
King Abdullah University of Science and Technology	*Thuwal, Saudi Arabia*
MS in Computer Science	*Sep. 2018 - Dec. 2019*
Moscow Institute of Physics and Technology	*Moscow, Russia*
BS in Applied Mathematics and Physics	*Sep. 2014 - Jun. 2018*

Skills

Programming	C/C++, Python; **Past Experience:** Go, C#, VB.NET
Mathematics	Calculus, Linear Algebra, Probability and Statistics

Honors & Awards

2021	**Best Student Paper Award**, FL-ICML 2021 Workshop	*Online*
2021	**Yandex Ilya Segalovich Scientific Prize**, for young researchers	*Moscow, Russia*
2020	**Yandex Ilya Segalovich Scientific Prize**, for young researchers	*Moscow, Russia*
2015-2017	**Abramov's Fund Scholarship**, for top students of Moscow Institute of Physics and Technology	*Moscow, Russia*
2014	**Honourable Mention**, APhO (Asian Physics Olympiad)	*Singapore*
2014	**Prize-Winner**, All-Russian School Physics Olympiad, Final Round	*Saint Petersburg, Russia*
2014	**Winner**, All-Russian School Programming Olympiad, Region Round	*Moscow, Russia*
2014	**Winner**, All-Russian School Math Olympiad, Region Round	*Moscow, Russia*
2012-2014	**Russian President's Scholarship**, for high school students	*Russia*
2012-2014	**Moscow Governor's Scholarship**, for high school students	*Moscow, Russia*
2013	**Winner**, All-Russian School Physics Olympiad, Final Round	*Vladivostok, Russia*
2012	**Prize-Winner**, All-Russian School Physics Olympiad, Final Round	*Saransk, Russia*

Papers

Optimal Decentralized Algorithms for Saddle Point Problems over Time-Varying Networks	*arXiv 2021*
Aleksandr Beznosikov, Alexander Rogozin, Dmitry Kovalev, Alexander Gasnikov	*13 Jul, 2021*
Lower Bounds and Optimal Algorithms for Smooth and Strongly Convex Decentralized Optimization Over Time-Varying Networks	*ICML 2021 Workshop*
Dmitry Kovalev, Elnur Gasanov, Peter Richtárik, Alexander Gasnikov	*08 Jun 2021*
An Optimal Algorithm for Strongly Convex Minimization under Affine Constraints	*arXiv 2021*
Adil Salim, Laurent Condat, Dmitry Kovalev, Peter Richtárik	*22 Feb 2021*

ADOM: Accelerated Decentralized Optimization Method for Time-Varying Networks

DMITRY KOVALEV, EGOR SHULGIN, PETER RICHTÁRIK, ALEXANDER ROGOZIN, ALEXANDER GASNIKOV

ICML 2021

18 Feb 2021

IntSGD: Floatless Compression of Stochastic Gradients

KONSTANTIN MISHCHENKO, BOKUN WANG, DMITRY KOVALEV, PETER RICHTÁRIK

arXiv 2021

16 Feb 2021

Decentralized Distributed Optimization for Saddle Point Problems

ALEXANDER ROGOZIN, ALEXANDER BEZNOSIKOV, DARINA DVINSKIKH, DMITRY KOVALEV, PAVEL DVURECHENSKY, ALEXANDER GASNIKOV

arXiv 2021

15 Feb 2021

A Linearly Convergent Algorithm for Decentralized Optimization: Sending Less Bits for Free!

DMITRY KOVALEV, ANASTASIA KOLOSKOVA, MARTIN JAGGI, PETER RICHTÁRIK, SEBASTIAN U. STICH

AISTATS 2021

03 Nov 2020

Linearly Converging Error Compensated SGD

EDUARD GORBUNOV, DMITRY KOVALEV, DMITRY MAKARENKO , PETER RICHTÁRIK

NeurIPS 2020

23 Oct 2020

Towards Accelerated Rates for Distributed Optimization over Time-varying Networks

ALEXANDER ROGOZIN, VLADISLAV LUKOSHKIN , ALEXANDER GASNIKOV, DMITRY KOVALEV, EGOR SHULGIN

arXiv 2020

23 Sep 2020

Optimal and Practical Algorithms for Smooth and Strongly Convex Decentralized Optimization

DMITRY KOVALEV, ADIL SALIM, PETER RICHTÁRIK

NeurIPS 2020

21 Jun 2020

From Local SGD to Local Fixed Point Methods for Federated Learning

GRIGORY MALINOVSKY, DMITRY KOVALEV, ELNUR GASANOV, LAURENT CONDAT, PETER RICHTÁRIK

ICML 2020

03 Apr 2020

Acceleration for Compressed Gradient Descent in Distributed and Federated Optimization

ZHIZE LI, DMITRY KOVALEV, XUN QIAN, PETER RICHTÁRIK

ICML 2020

26 Feb 2020

Fast Linear Convergence of Randomized BFGS

DMITRY KOVALEV, ROBERT M. GOWER, PETER RICHTÁRIK, ALEXANDER ROGOZIN

arXiv 2020

26 Feb 2020

Variance Reduced Coordinate Descent with Acceleration: New Method With a Surprising Application to Finite-Sum Problems

FILIP HANZELY, DMITRY KOVALEV, PETER RICHTÁRIK

ICML 2020

11 Feb 2020

Distributed Fixed Point Methods with Compressed Iterates

SÉLIM CHRAIBI, AHMED KHALED, DMITRY KOVALEV, PETER RICHTÁRIK, ADIL SALIM, MARTIN TAKÁČ

arXiv 2019

20 Dec 2019

Accelerated methods for composite non-bilinear saddle point problem

MOHAMMAD ALKOUSA, DARINA DVINSKIKH, FEDOR STONYAKIN, ALEXANDER GASNIKOV, DMITRY KOVALEV

Computational Mathematics and Mathematical Physics 2020

09 Dec 2019

Stochastic Newton and Cubic Newton Methods with Simple Local Linear-Quadratic Rates

DMITRY KOVALEV, KONSTANTIN MISHCHENKO, PETER RICHTÁRIK

NeurIPS 2019 Workshop

03 Dec 2019

Stochastic Proximal Langevin Algorithm: Potential Splitting and Nonasymptotic Rates

Adil Salim, Dmitry Kovalev, Peter Richtárik

NeurIPS 2019

28 May 2019

Revisiting Stochastic Extragradient

Konstantin Mishchenko, Dmitry Kovalev, Egor Shulgin, Peter Richtárik, Yura Malitsky

AISTATS 2020

27 May 2019

RSN: Randomized Subspace Newton

Robert M. Gower, Dmitry Kovalev, Felix Lieder, Peter Richtárik

NeurIPS 2019

26 May 2019

Stochastic Distributed Learning with Gradient Quantization and Variance Reduction

Samuel Horváth, Dmitry Kovalev, Konstantin Mishchenko, Peter Richtárik, Sebastian U. Stich

arXiv 2019

04 Apr 2019

Don't Jump Through Hoops and Remove Those Loops: SVRG and Katyusha are Better Without the Outer Loop

Dmitry Kovalev, Samuel Horváth, Peter Richtárik

ALT 2020

24 Jan 2019

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 2018

28 Feb 2018

Stochastic Spectral and Conjugate Descent Methods

Dmitry Kovalev, Eduard Gorbunov, Elnur Gasanov, Peter Richtárik

NeurIPS 2018

11 Feb 2018

Conferences & Talks

ICCOPT 2019

Talk: «Revisiting Stochastic Extragradient Method»

TU, Berlin, Germany

5 Aug. 2019

Data Science Summer School 2019

Poster: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction»

École polytechnique, Paris, France

26 Jun. 2019

Traditional School (Control, Information and Otimization)

Poster: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction»

Voronovo, Moscow Region, Russia

20 Jun. 2019

Weekly seminar «Automatic control and Optimization Theory»

Talk: «Stochastic Spectral and Conjugate Descent Methods»

IPU, Moscow, Russia

26 Mar. 2019

Seminar «Modern Optimization Methods»

Talk: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction»

MIPT, Moscow, Russia

25 Mar. 2019

Traditional School (Control, Information and Otimization)

Poster: «Stochastic Spectral Descent Methods»

Voronovo, Moscow Region, Russia

Jun. 2018

Optimization and Big Data Workshop

Poster: Stochastic Spectral Descent Methods

KAUST, Thuwal, Saudi Arabia

Feb. 2018