Dmitry **Kovalev**

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Education

King Abdullah University of Science and Technology — *Thuwal, Saudi Arabia*
PhD in Computer Science — *Jan. 2020 - PRESENT*

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
Mathematics Calculus, Linear Algebra, Probability and Statistics

Honors & Awards

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

A Linearly Convergent Algorithm for Decentralized Optimization: Sending Less Bits for Free!
Dmitry Kovalev, Anastasia Koloskova, Martin Jaggi, Peter Richtarik, Sebastian U. Stich — *Nov. 2020*
- arXiv 2020

Linearly Converging Error Compensated SGD
Eduard Gorbunov, Dmitry Kovalev, Dmitry Makarenko, Peter Richtárik — *Oct. 2020*
- NeurIPS 2020

Towards Accelerated Rates for Distributed Optimization over Time-varying Networks
Alexander Rogozin, Vladislav Lukoshkin, Alexander Gasnikov, Dmitry Kovalev, Egor Shulgin — *Sep. 2020*
- arXiv 2020

Optimal and Practical Algorithms for Smooth and Strongly Convex Decentralized Optimization
Dmitry Kovalev, Adil Salim, Peter Richtárik — *Jun. 2020*
- NeurIPS 2020

From Local SGD to Local Fixed Point Methods for Federated Learning

Grigory Malinovsky, Dmitry Kovalev, Elnur Gasanov, Laurent Condat, Peter Richtárik *Apr. 2020*

- ICML 2020

Acceleration for Compressed Gradient Descent in Distributed and Federated Optimization

Zhize Li, Dmitry Kovalev, Xun Qian, Peter Richtárik *Feb. 2020*

- ICML 2020

Fast Linear Convergence of Randomized BFGS

Dmitry Kovalev, Robert M. Gower, Peter Richtárik, Alexander Rogozin *Feb. 2020*

- arXiv 2020

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

Filip Hanzely, Dmitry Kovalev, Peter Richtárik *Feb. 2020*

- ICML 2020

Distributed Fixed Point Methods with Compressed Iterates

Sélim Chraibi, Ahmed Khaled, Dmitry Kovalev, Peter Richtárik, Adil Salim, Martin Takáč *Dec. 2019*

- arXiv 2019

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

Dmitry Kovalev, Konstantin Mishchenko, Peter Richtárik *Dec. 2019*

- NeurIPS 2019 Workshop: Beyond First Order Methods in Machine Learning

Accelerated methods for composite non-bilinear saddle point problem

Mohammad Alkousa, Darina Dvinskikh, Fedor Stonyakin, Alexander Gasnikov, Dmitry Kovalev *Dec. 2019*

- arXiv 2019

Stochastic Proximal Langevin Algorithm: Potential Splitting and Nonasymptotic Rates

Adil Salim, Dmitry Kovalev, Peter Richtárik *May 2019*

- NeurIPS 2019

Revisiting Stochastic Extragradient

Konstantin Mishchenko, Dmitry Kovalev, Egor Shulgin, Peter Richtárik, Yura Malitsky *May 2019*

- AISTATS 2020

RSN: Randomized Subspace Newton

Robert M. Gower, Dmitry Kovalev, Felix Lieder, Peter Richtárik *May 2019*

- NeurIPS 2019

Stochastic Distributed Learning with Gradient Quantization and Variance Reduction

Samuel Horváth, Dmitry Kovalev, Konstantin Mishchenko, Peter Richtárik, Sebastian U. Stich *Jan. 2019*

- arXiv 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 *Jan. 2019*

- ALT 2020

A hypothesis about the rate of global convergence for optimal methods (Newton's type) in smooth convex optimization

Alexander Gasnikov, Dmitry Kovalev *Feb. 2018*

- Computer Research and Modeling, 2018, Volume 10, Issue 3, Pages 305–314

Stochastic Spectral and Conjugate Descent Methods

Dmitry Kovalev, Eduard Gorbunov, Elnur Gasanov, Peter Richtárik *Feb. 2018*

- NeurIPS 2018

Conferences & Talks

ICCOPT 2019 — *TU, Berlin, Germany*

Talk: «Revisiting Stochastic Extragradient Method» — *5 Aug. 2019*

Data Science Summer School 2019 — *École polytechnique, Paris, France*

Poster: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction» — *26 Jun. 2019*

Traditional School (Control, Information and Otimization) — *Voronovo, Moscow Region, Russia*

Poster: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction» — *20 Jun. 2019*

Weekly seminar «Automatic control and Optimization Theory» — *IPU, Moscow, Russia*

Talk: «Stochastic Spectral and Conjugate Descent Methods» — *26 Mar. 2019*

Seminar «Modern Optimization Methods» — *MIPT, Moscow, Russia*

Talk: «Stochastic Distributed Learning with Gradient Quantization and Variance Reduction» — *25 Mar. 2019*

Traditional School (Control, Information and Otimization) — *Voronovo, Moscow Region, Russia*

Poster: «Stochastic Spectral Descent Methods» — *Jun. 2018*

Optimization and Big Data Workshop — *KAUST, Thuwal, Saudi Arabia*

Poster: Stochastic Spectral Descent Methods — *Feb. 2018*