

Dmitry Kovalev

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Education

King Abdullah University of Science and Technology

PHD IN COMPUTER SCIENCE

Thuwal, Saudi Arabia

Jan. 2020 - PRESENT

King Abdullah University of Science and Technology

MS IN COMPUTER SCIENCE

Thuwal, Saudi Arabia

Sep. 2018 - Dec. 2019

Moscow Institute of Physics and Technology

BS IN APPLIED MATHEMATICS AND PHYSICS

Moscow, Russia

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 , APPhO (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

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 Optimization)

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 Optimization)

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