

# 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

BSC IN APPLIED MATHEMATICS AND PHYSICS

Moscow, Russia

Sep. 2014 - Jun. 2018

## Skills

**Programming** C/C++, Python, Go

**Mathematics** Calculus, Linear Algebra, Probability and Statistics

## Honors & Awards

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

### 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

• arXiv 2019

### 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

- NeurIPS 2019 Workshop: Bridging Game Theory and Deep Learning
- arXiv 2019

## 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

- arXiv 2019

## 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

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### 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 Optimization)

*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 Optimization)

*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