

# Konstantin Mishchenko

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## Education

- 2017-2020 KAUST, PhD in Computer Science, Adviser: [Peter Richtárik](#)
- 2016–2017 ENS Cachan and Paris-Dauphine, MSc in Machine Learning
- 2012–2016 Moscow Institute of Physics and Technology BSc in Computer Science and Physics

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## Conferences

- 2019 Frontiers of Deep Learning Workshop at Simons Institute for the Theory of Computing
- 2019 International Conference on Continuous Optimization, Invited talk, Organizer of 3 sessions
- 2019 International Conference on Machine Learning, Time Series Workshop, Poster
- 2018 Conference on Neural Information Processing Systems, Poster
- 2018 International Conference on Machine Learning, Oral
- 2018 International Symposium on Mathematical Programming, Invited talk
- 2018 Informs Optimization Society Meeting, Invited Talk, Organizer of a session

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## Internships and projects

- 2019 Research Intern at Google Brain, Mountain View
- 2018 Applied Scientist Intern at Amazon
- 2017 Pre-Doc Summer School, ETH Zurich
- 2017 Machine Learning Summer School (Acceptance rate 15%, the only accepted undergrad student), MPI Tübingen
- 2017 Google Machine Learning Summit, Zurich, Poster
- 2016 C++ development summer intern, AIM High Tech (High Frequency Trading), Moscow

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## Achievements and awards

- 2019 NeurIPS 2019 Best Reviewer Award
- 2017-2019 PhD Progress Marked as "Outstanding" twice, in 2018 and 2019
- 2018 71st place worldwide in IEEEExtreme team programming competition
- 2017 1st place in the Plume Labs machine learning competition on air pollution prediction
- 2017 123rd place worldwide in IEEEExtreme team programming competition
- 2016-2017 Paris Graduate School of Mathematics fellowship (highly competitive scholarship with about 20 laureates every year)
- 2015 Higher School of Economics Olympiad on Applied Math and Informatics, 1st prize
- 2014 Abramov-Frolov scholarship for excellence in study
- 2012 Top-1 (max score) at the National Exam in math (only 54 participants out of >800k scored max)
- 2012 Moscow Mathematical Olympiad, 1st prize

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## Research interests

- Stochastic and Distributed Algorithms
- Games, minimax problems and GANs
- Deep Learning

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## Papers

- Better Communication Complexity for Local SGD
- First Analysis of Local GD on Heterogeneous Data
- A Self-supervised Approach to Hierarchical Forecasting with Applications to Groupwise Synthetic Controls, Proceeding of the Time Series workshop at International Conference on Machine Learning (**ICML, poster**), 2019
- MISO is Making a Comeback With Better Proofs and Rates
- DAve-QN: A Distributed Averaged Quasi-Newton Method with Local Superlinear Convergence Rate
- A Stochastic Decoupling Method for Minimizing the Sum of Smooth and Non-Smooth Functions
- Revisiting Stochastic Extragradient
- Stochastic Distributed Learning with Gradient Quantization and Variance Reduction
- 99% of Parallel Optimization is Inevitably a Waste of Time
- Distributed Learning with Compressed Gradient Differences
- SEGA: Variance Reduction via Gradient Sketching, Published in proceeding of the Conference on Neural Information Processing Systems (**NeurIPS, Poster**), 2018
- A Stochastic Penalty Model for Convex and Nonconvex Optimization with Big Constraints
- A Distributed Flexible Delay-tolerant Proximal Gradient Algorithm
- A Delay-Tolerant Proximal-Gradient Algorithm for Distributed Learning, Published in proceedings of the International Conference on Machine Learning (**ICML, Oral**), 2018

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## Reviewing and serving as Program Committee Member

- 2019 AAAI Conference on Artificial Intelligence (AAAI-20), Program Committee Member
- 2019 Conference on Neural Information Processing Systems, Program Committee Member
- 2019 Mathematical Programming Journal, Reviewer
- 2019 Conference on Uncertainty in Artificial Intelligence, Program Committee Member
- 2019 International Conference on Machine Learning, Program Committee Member

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## Languages

Russian	Native
English	Fluent
French	Intermediate