Peter Richtárik: Curriculum Vitae

1. CONTACT DETAILS

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2. RESEARCHER IDs

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3. RESEARCH INTERESTS

◇ machine learning, federated learning, empirical risk minimization
◇ big data optimization, convex and non-convex optimization; 0th, 1st, and 2nd order optimization methods
◇ randomized algorithms, randomized coordinate descent, stochastic gradient descent, variance reduction
◇ randomized numerical linear algebra
◇ parallel and distributed computing, supercomputing, gradient compression

4. ACADEMIC POSITIONS

2019–now	**Professor**, Computer Science, King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia
2022–2023	**Adjunct Professor**[1], Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, United Arab Emirates
2017–2019	**Visiting Professor**, Moscow Institute of Physics and Technology, Russia
2017–2019	**Associate Professor**, Computer Science, KAUST, Kingdom of Saudi Arabia
2016–2019	**Associate Professor (Reader)**, Mathematics, University of Edinburgh
2013	**Invited Visiting Scientist**, Simons Institute for the Theory of Computing, UC Berkeley
2009–2016	**Assistant Professor (Lecturer)**, School of Mathematics, University of Edinburgh
2007–2009	**Postdoctoral Fellow**, Center for Operations Research and Econometrics and Department of Mathematical Engineering, Catholic University of Louvain, Belgium (host: Yu. Nesterov)

5. EDUCATION

2007	**PhD, Operations Research, Cornell University**
2006	MS, Operations Research, Cornell University
2001	Mgr, Mathematics, Comenius University, Slovakia, 100% academic grades, ranked #1
2001	Bc, Management, Comenius University, Slovakia, 100% academic grades, ranked #1
2000	Bc, Mathematics, Comenius University, Slovakia, 100% academic grades, ranked #1

[1]This position allowed me to supervise Dr. Sarit Khirirat – a postdoc located at MBZUAI.

6. AWARDS & RECOGNITIONS

Awards explicitly addressed to my students, postdocs or coauthors for a talk, poster or paper based on joint research with me are listed in the section "8.4 My Team: Awards and Recognitions".

2025 **Spotlight Paper at ICLR 2025** (for paper [244])
2024 **Top 8–14 Author at NeurIPS 2024** in terms of the number of papers accepted to the conference[2]
2024 **Charles Broyden Prize** (for paper [139])
2024 **Oral Paper at NeurIPS 2024** (0.4% acceptance rate[3]; paper [249])
2024 **Spotlight Paper at NeurIPS 2024** (for paper [243])
2024 **Oral Paper at ICML 2024** (1.5% acceptance rate; paper [231])
2023 **#1 in Asia and #3 in Europe in Machine Learning according to CSRankings.org**[4]
2023 Research.com Computer Science in Saudi Arabia Leader Award
2023 Research.com Mathematics in Saudi Arabia Leader Award
2023 **Oral Paper at ICLR 2023** (for paper [184])
2022 **Top 10–14 Author at NeurIPS 2022** in terms of the number of papers accepted to the conference[5]
2022 Research.com Rising Star of Science[6], global rank 214 among all fields of science
2022 **Spotlight Paper at ICLR 2022** (for paper [156])
2021 **Oral Paper at NeurIPS 2021** (less than 1% acceptance rate; paper [167])
2021 **2020 COAP Best Paper Award**[7] (for paper [65])
2021 **One of the 10 Most Cited Articles Published in SIMAX Since 2019**[8] for paper [56]
2020 **Best Paper Award at the NeurIPS 2020 Workshop on Scalability, Privacy, and Security in Federated Learning** for paper [135]
2020 **Top 30–50 author at ICML 2020** (in number of papers accepted)
2020 1st Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [39]
2020 3rd Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [44]
2020 3rd Most Downloaded Paper in "SIAM J. on Optimization" for paper [57]
2020 4th Most Downloaded Paper in "SIAM J. on Optimization" for paper [21]
2019 1st Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [39]
2019 4th Most Downloaded Paper in "SIAM J. on Optimization" for paper [57]
2019 5th Most Downloaded Paper in "SIAM J. on Optimization" for paper [21]
2019 10th Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [44]
2019 **Interviewed by Robin.ly for their "Leaders in AI" platform at NeurIPS 2019**[9]

[2] https://papercopilot.com/paper-list/neurips-paper-list/neurips-2024-paper-list/

[3] 61 papers out of more than 15,000.

[4] According to CS Rankings in the 5 year period 2019–2023, I rank #1 in Machine Learning in all of Asia: 1) Peter Richtárik at KAUST (14), 2) Sung Ju Hwang at KAIST (13.6), 3) Jinwoo Shin at KAIST (13.2), 4) Jun Zhu at Tsinghua (12.3), 5) Masashi Sugiyama at Tokyo (12), 6) Junchi Yan at Shanghai Jiao Tong (10.4) 7) Taiji Suzuki at Tokyo (9.6), 8) Kun Zhang at MBZUAI (9.3). If KAUST was in Europe, I would rank #3 in Europe in the same metric: 1) Andreas Krause at ETH (17.5), 2) Bernhard Schölkopf at Max Planck (14.9), 3) Peter Richtárik at KAUST (14), 4) Volkan Cevher at EPFL (12.5), 5) Max Welling at Amsterdam (12.2), 6) Stephan Günnemann at TU Munich (12.1), 7) Yishay Mansour at Tel Aviv (9.6), 8) Shie Mannor at Technion (9.3), 9) Francis Bach at ENS (9.2), 10) Shimon Whiteson at Oxfrod (8.9), 11) José Miguel Hernández-Lobato at Cambridge (8.8).

[5] https://papercopilot.com/paper-list/neurips-paper-list/neurips-2022-paper-list/ (my team had 12 papers accepted; I was a coauthor on 9)

[6] https://research.com/u/peter-richtarik

[7] For the best paper published in Computational Optimization and Applications in 2020.

[8] https://sinews.siam.org/Details-Page/10-most-highly-cited-articles-from-simax-since-2019-1

[9] From Robin.ly LinkedIn Post: "We are interviewing the world's leading AI academics this week at NeurIPS2019. Look forward to sharing much more on the state of AI research, how it's fueling AI commercialization & what we can expect from AI in the next decade. Spotlight interviews with Yoshua Bengio, Peter Richtárik, Charles Onu, Max Welling, Shimon Whiteson, Sharon Zhou, Liwei Wang, Song Han & many more. "

2019	**Best NeurIPS Reviewer Award**[10]
2019	**Distinguished Speaker Award,** Int. Conf. on Continuous Optimization, Berlin, Germany
2018	**Best NeurIPS Reviewer Award**[11]
2018	2nd Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [39]
2018	6th Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [44]
2017	1st Most Read Paper in "Optimization Methods and Software" for paper [41]
2017	1st Most Downloaded Paper in "SIAM J. on Matrix Analysis and Applications" for paper [39]
2017	1st Most Trending Paper in "Mathematical Programming" for paper [10]
2017	**Announcement of "Federated Learning"** by Google (based on papers [51, 52])
2016–2017	2nd Most Downloaded Paper in "SIAM J. on Optimization" for paper [21]
2016	**SIAM SIGEST Outstanding Paper Award** for paper [21]
2016	**EUSA Best Research or Dissertation Supervisor Award**[12] (2nd Prize)
2016–now	**Turing Fellow, The Alan Turing Institute**, London
2016	**EPSRC Fellowship in Mathematical Sciences**[13]
2014	Nominated for the **Chancellor's Rising Star Award**[14], University of Edinburgh
2013	**Simons Institute Visiting Scientist Fellowship**, UC Berkeley
2013	Nominated for the **2014 Microsoft Research Faculty Fellowship**[15]
2011 & 2012	Nominated for the **Innovative Teaching Award**, University of Edinburgh
2011–2017	**Honorary Fellow**, Heriot-Watt University
2007	**CORE Fellowship**, Université catholique de Louvain
2002	**Cornell University Graduate Fellowship**
2001	**Dean's Prize and Rector's Prize**, Comenius University
1992–2001	Winner of Numerous Mathematical Olympiads and Competitions

7. GRANTS

7.1 MY GRANTS[16]

2025–2028	**1,600,000 SAR (PI)**, RDIA Baseload Applied Grant (BAG)
2024–2029	**$11,000,000 (Co-PI)**, KAUST Center of Excellence for Generative AI
2024	**1,000,000 SAR (PI)**, SDAIA-KAUST Center of Excellence in Data Science and Artificial Intelligence
2023–2024	**$60,000 (PI)**, SDAIA-KAUST Center of Excellence in Data Science and Artificial Intelligence
2023–2024	**$650,000 (PI)**, KAUST Baseline Research Grant[17]
2022–2023	**$60,000 (PI)**, SDAIA-KAUST Center of Excellence in Data Science and Artificial Intelligence
2022–2023	**$40,000 (PI)**, Top-up to KAUST Baseline Research Grant
2022–2023	**$540,000 (PI)**, KAUST Baseline Research Grant
2021–2022	**$540,000 (PI)**, KAUST Baseline Research Grant
2021–2022	**$100,000 (PI)**, AI Initiative Funding
2020–2021	**$540,000 (PI)**, KAUST Baseline Research Grant

[10] "Thank you for all your hard work reviewing for NeurIPS 2019! We are delighted to inform you that you were one of the 400 highest-scoring reviewers this year! You will therefore be given access (for a limited period of time) to one free registration to this year's conference; you will later receive additional information by email explaining how to access your registration. "

[11] "We are delighted to inform you that you were one of the 218 highest-scoring reviewers this year! You will therefore be given access (for a limited period of time) to one free registration to this year's conference."

[12] EUSA = Edinburgh University Students' Association. One first and one second prize are given each year across all disciplines and levels of seniority at the University of Edinburgh.

[13] In total, 5 fellowships in mathematics were awarded in the UK in this round at all levels of seniority.

[14] One of two nominated from the School of Mathematics.

[15] Selected universities can nominate a single candidate. No European scientists got the award in 2014.

[16] All small grants (value below $10k) are excluded from this list. The total value of the 16 small grants excluded is £42,090. Funding from the VCC and ECRC centers at KAUST is excluded from this list.

[17] Unrestricted basic research funding offered each year to KAUST Professors.

2020	**$100,000 (PI)**, AI Initiative Seed Funding, "Algorithmic, Systems and Privacy Aspects of Split Learning", Joint with: Marco Canini (KAUST, Co-I) and Panos Kalnis (KAUST, Co-I)
2019–2020	**$200,000 (PI)**, Extreme Computing Research Center (ECRC) funding, KAUST, "Optimization for Machine Learning", Joint with: Tong Zhang (HKUST, PI)
2019–2020	**$540,000 (PI)**, KAUST Baseline Research Grant
2018–2019	**£216,843 (Co-I)**, Innovate UK Grant, "Renewable Energy Performance Score (REPSCORE)", Joint with: Enian (PI), Daniel Friedrich (Edinburgh, PI)
2018–2021	**$974,789 (Co-I)**, CRG2017 Grant, "Analyzing Large Scale 3D Shape Collections", Joint with: Peter Wonka (KAUST, PI), Maks Ovsjanikov (École Polytechnique, Co-I)
2017–2019	**RUB 7,960,000 (PI)**, Visiting Professor Grant, Moscow Institute of Physics and Technology
2018	**$10,000 (PI)**, KICP grant in support of KAUST Research Workshop on Optimization and Big Data, 2018
2018–2019	**$400,000 (PI)**, KAUST Baseline Research Grant[18]
2017–2018	**$79,281 (PI)**, KAUST Office of Sponsored Research Conference Support Grant URF/1/3347-01, "Optimization and Big Data", Joint with: Marco Canini (KAUST, PI)
2016–2020	**£70,000** EPSRC CASE[19] PhD Studentship for Filip Hanzely
2017–2018	**$400,000 (PI)**, KAUST Baseline Research Grant
2016–2017	**$133,333 (PI)**, KAUST Baseline Research Grant (4 months of cover: March-June 2017)
2016–2020	**£45,000 (PI)**, Amazon Research Grant
2016–2020	**£823,211 (PI)**, EPSRC Early Career Fellowship in Mathematical Sciences EP/N005538/1, "Randomized Algorithms for Extreme Convex Optimization"
2016–2020	**$20,000 (PI)**, Amazon EC2 Grant (partner funding associated with the EPSRC Fellowship)
2015	**£20,000 (PI)**, Alan Turing Institute Scoping Workshop Grant, "Distributed Machine Learning and Optimization", Joint with: Artur Czumaj (Warwick, PI), Ilias Diakonikolas (Edinburgh, PI), Mark Girolami (Warwick, PI), Raphael Hauser (Oxford, PI), John Shawe-Taylor (UCL, PI)
2015	**£12,000 (PI)**, Alan Turing Institute Scoping Workshop Grant, "Theoretical and Computational Approaches to Large Scale Inverse Problems", Joint with: Simon Arridge (UCL, PI), John Aston (Cambridge, PI), Carola-Bibiane Schönlieb (Cambridge, PI), Andrew Stuart (Warwick, PI), Jared Tanner (Oxford, PI)
2014–2017	**$180,000**, Google Europe Doctoral Fellowship for Jakub Konečný
2013–2015	**£125,849 (PI)**, EPSRC First Grant EP/K02325X/1, "Accelerated Coordinate Descent Methods for Big Data Optimization"
2014–2015	**£40,000 (PI)**, School of Mathematics Grant, "Accelerated Coordinate Descent Methods for Big Data Optimization", matching funding for my postdoc Z. Qu
2013	**£18,785 (PI)**, NAIS Travel Grant, my 2 students spending semester at Berkeley
2012–2014	**£66,300 (PI)**, NAIS Lecturer Grant, paying for a proportion of my time
2012–2014	**£10,000 (PI)**, NAIS Startup Grant
2012–2013	**£49,518 (Co-I)**, EPSRC grant EP/J020567/1, "Algorithms for Data Simplicity", Joint with: Jared Tanner (Oxford, PI)
2011–2014	**£646,264 (Co-I)**, EPSRC and RCUK grant EP/I017127/1, "Mathematics for Vast Digital Resources", Joint with: Burak Büke (Edinburgh, Co-I) and Jacek Gondzio (Edinburgh, PI)

7.2 GRANTS I HELPED TO PREPARE[20]

2014–2019	£42 million + £5 million, "The Alan Turing Institute". I am one of a small number of people who helped to prepare Edinburgh's bid.

[18] Unrestricted basic research funding offered each year to KAUST Associate Professors.
[19] CASE = Cooperative Awards in Science and Engineering
[20] Large grants which I helped to prepare but where I am not formally an investigator.

2014–2023	£4.5 million, EPSRC grant, "Maxwell Institute Graduate School in Mathematical Analysis and Applications", PI: Anthony Carbery (Edinburgh). I am one of the named PhD supervisors on the grant.
2014–2021	£5.03 million, EPSRC grant, "Centre for Doctoral Training in Data Science", PI: Chris Williams (Edinburgh). I am one of 45 named potential PhD advisors at U of Edinburgh.

8. MY TEAM

8.1 MY TEAM @ KAUST

01/2025–now	**PhD student: Ivan Ilin (from Novosibirsk State University, Russia)**
01/2025–now	**PhD student: Artem Riabinin (from Lomonosov Moscow State U, Russia)**
10/2024–now	**Intern: Philip Zmushko (from MIPT, Russia)**
09/2024–now	**Intern: Zhirayr Tovmasyan (from Yerevan State University, Armenia)**
06/2024–11/2024	Intern: Aadi Rane (from UC Berkeley)
05/2024–09/2024	Intern: Wojciech Anyszka (from U of Groningen, Netherlands)
02/2024–now	**Postdoc: Sarit Khirirat (from KTH, Sweden)**
02/2024–05/2024	Intern: Simone Maria Giancola (from Bocconi, Italy)
01/2024–05/2024	Intern: Dymitr Lubczyk (from Amsterdam, Netherlands)
01/2024–04/2024	Intern: Kirill Acharya (from MIPT, Russia)
01/2024–05/2024	Intern: Robin Yadav (from UBC, Canada)
01/2024–now	**PhD student: Kaja Gruntkowska (from U of Oxford, UK)**
12/2023–03/2024	Intern: Anh-Duc Nguyen (from NUS, Singapore)
10/2023–03/2024	Intern: Timur Kharisov (from MIPT, Russia)
10/2023–04/2024	Intern: Georg Meinhardt (from University of Oxford, UK)
09/2023–01/2024	Intern: Marta Pozzi (from Pavia, Italy)
09/2023–02/2024	Intern: Ákos Zahorský (from Eötvös Loránd University, Hungary)
08/2023–now	**MS student: Omar Shaikh Omar (from University of Washington, USA)**
08/2023–12/2024	MS student: Artem Riabinin (from Lomonosov Moscow State U, Russia)
08/2023–now	**PhD student: Artavazd Maranjyan (from Yerevan State U, Armenia)**
07/2023–09/2023	Intern: Andrei Panferov (from MIPT, Russia)
06/2023–08/2023	Intern: Babis Kostopoulos (from U of Athens, Greece)
04/2023–09/2023	Intern: Ahmad Rammal (from École Polytechnique, France)
01/2023–05/2023	Intern: Dinis Seward (from University of Oxford, UK)
01/2023–12/2024	MS student: Ivan Ilin (from Novosibirsk State University, Russia)
01/2023–now	**PhD student: Hanmin Li (from USTC, China)**
09/2022–now	**Postdoc: Yury Demidovich (from MIPT, Russia)**
09/2022–now	**PhD student: Abdurakhmon Sadiev (from MIPT, Russia)**
08/2022–10/2023[21]	MS student: Rafał Szlendak (from Warwick University, UK)
08/2022–02/2023	Intern: Wenzhi "Tom" Fang (from ShanghaiTech University)
07/2022–08/2022	Intern: Omar Shaikh Omar (from University of Washington, USA)
07/2022–10/2022	Intern: Michał Grudzień (from Oxford, UK)
06/2022–01/2023	Intern: Artavazd Maranjyan[22] (from Yerevan State University, Armenia)
06/2022–09/2022	Intern: Kaja Gruntkowska (from Warwick, UK)
06/2022–now	**PhD student: Igor Sokolov (continuing after MS at KAUST)**
01/2022–07/2022	Intern: Abdurakhmon Sadiev (from MIPT, Russia)
01/2022–now	**PhD student: Kai Yi (from Xi'an Jiaotong University, China)**
01/2022–now	**PhD student: Grigory Malinovsky (from MIPT, Russia)**
11/2021–06/2024	Postdoc: Avetik Karagulyan (from CREST, France)
11/2021–02/2022	Intern: Navish Kumar (from IIT Kharagpur, India)

[21] Dropped out of MS studies to join a Large Language Model startup in Germany.
[22] I am supervising Arto's MS thesis at Yerevan State University.

09/2021–now	**PhD student: Egor Shulgin (continuing after MS at KAUST)**
07/2021–11/2021	Intern: Muhammad Harun Khan (from Imperial College, UK)
07/2021–10/2021	Intern: Rafał Szlendak (from Warwick University, UK)
06/2021–06/2024	Postdoc: Alexander Tyurin (from MIPT, Russia)
06/2021–08/2021	Intern: Bokun Wang (from UC Davis, USA)
03/2021–06/2024	PhD student: Lukang Sun (from Nanjing University, China)
03/2021–08/2021	Intern: Rustem Islamov[23] (from TU Munich, Germany)
03/2021–11/2021	Intern: Ilyas Fatkhullin[24] (from TU Munich, Germany)
01/2021–11/2023	PhD student: Slavomír Hanzely (continuing after MS at KAUST)
09/2020–03/2022	Research Scientist: Zhize Li (from Tsinghua University, China)
10/2020–03/2021	Intern: Bokun Wang (from UC Davis, USA)
09/2020–02/2021	Intern: Eduard Gorbunov (from MIPT, Russia)
08/2020–now	**PhD student: Konstantin Burlachenko (from Bauman Moscow State Technical University, Russia)**
08/2020–05/2022	MS student: Igor Sokolov (from MIPT, Russia)
08/2020–12/2021	MS student: Grigory Malinovsky (from MIPT, Russia)
08/2020–09/2020	Intern: Wenlin Chen (from University of Manchester, UK)
06/2020–11/2020	Intern: Rustem Islamov (from MIPT, Russia)
05/2020–06/2020	Intern: Othmane Sebbouh (from École Polytechnique, France)
05/2020–10/2020	Intern: Ahmed Khaled Ragab (from Cairo University, Egypt)
02/2020–12/2020	Research Scientist: El Houcine Bergou (from Toulouse, France)
02/2020–08/2021	MS student: Egor Shulgin (from MIPT, Russia)
02/2020–03/2020	Intern: Eduard Gorbunov (from MIPT, Russia)
01/2020–02/2020	Intern: Alexander Rogozin (from MIPT, Russia)
01/2020–02/2020	Intern: Aleksandr Beznosikov (from MIPT, Russia)
01/2020–02/2020	Intern: Grigory Malinovsky (from MIPT, Russia)
01/2020–now	**PhD student: Elnur Gasanov (continuing after MS from KAUST)**
01/2020–09/2022	PhD student: Dmitry Kovalev (continuing after MS from KAUST)
11/2019–now	**Research Scientist: Laurent Condat (from Grenoble, France)**
10/2019–11/2022	Postdoc: Mher Safaryan (from Yerevan State University, Armenia)
09/2019–08/2020	Postdoc: Zhize Li (from Tsinghua University, China)
08/2019–12/2020	MS student: Alyazeed Basyoni (from Carnegie Mellon University, USA)
08/2019–12/2020	MS student: Slavomír Hanzely (from Comenius University, Slovakia)
06/2019–09/2019	Intern: Ahmed Khaled Ragab (from Cairo University, Egypt)
03/2019–09/2019	Intern: Sélim Chraibi (from Grenoble, France)
02/2019–10/2021	Postdoc: Adil Salim (from Télécom ParisTech, France)
02/2019–03/2019	Intern: Ľudovít Horváth (from Comenius University, Slovakia)
01/2019–02/2019	Intern: Dmitry Kamzolov (from MIPT, Russia)
01/2019–02/2019	Intern: Vladislav Elsukov (from MIPT, Russia)
01/2019–02/2019	Intern: Igor Sokolov (from MIPT, Russia)
01/2019–02/2019	Intern: Egor Shulgin (from MIPT, Russia)
01/2019–02/2019	Intern: Eduard Gorbunov (from MIPT, Russia)
01/2019–03/2022	PhD student: Alibek Sailanbayev (continuing after MS from KAUST)[25]
01/2019–07/2019	PhD student: Samuel Horváth (continuing after MS from KAUST)
11/2018–11/2021	Postdoc: Xun Qian (from Hong Kong Baptist University, Hong Kong)
09/2018–12/2019	MS student: Elnur Gasanov (from MIPT, Russia)
09/2018–12/2019	MS student: Dmitry Kovalev (from MIPT, Russia)
03/2018–08/2018	Intern: Sarah Sachs[26] (from TU Munich, Germany)

[23] I have supervised Rustem Islamov's BS thesis at MIPT. Rustem is now an MS student at Institut Polytechnique de Paris, France.

[24] I have supervised Ilyas Fatkhullin's MS thesis at TU Munich. Ilyas is now a PhD student at ETH Zürich Switzerland.

[25] Was forced to drop out of PhD due to serious personal/family reasons.

[26] I have supervised Sarah Sachs' MS thesis at TU Munich.

01/2018–02/2018	Intern: Eduard Gorbunov (from MIPT, Russia)
01/2018–02/2018	Intern: Elnur Gasanov (from MIPT, Russia)
01/2018–02/2018	Intern: Dmitry Kovalev[27] (from MIPT, Russia)
01/2018–02/2018	Intern: Slavomír Hanzely[28] (from Comenius University, Slovakia)
01/2018–01/2019	Postdoc: El Houcine Bergou (from Institut National Polytechnique, Toulouse, France)
10/2017–11/2017	Intern: Nikita Doikov (from HSE Moscow, Russia)
08/2017–12/2017	PhD student: Viktor Lukáček[29] (from Comenius University, Slovakia)
08/2017–12/2021	PhD student: Konstantin Mishchenko (from ENS, France)
08/2017–11/2020	PhD student: Filip Hanzely (now: Quant, Wincent)
08/2017–12/2018	MS student: Alibek Sailanbayev (from Nazarbayev University, Kazakhstan)
08/2017–12/2018	MS student: Samuel Horváth (from Comenius University, Slovakia)
05/2017–05/2019	Postdoc: Aritra Dutta (from University of Central Florida, USA)
05/2017–07/2017	Intern: Atal Sahu (from IIT Kanpur, India)
05/2017–07/2017	Intern: Aashutosh Tiwari (from IIT Kanpur, India)

8.2 MY TEAM @ Kempelen Institute for Intelligent Technologies (KInIT)

09/2022–10/2023	PhD student: Ivan Agarský (from Comenius University, Slovakia)

8.3 MY TEAM @ Mohammed bin Zayed University of Artificial Intelligence (MBZUAI)

09/2022–08/2023	Postdoc: Sarit Khirirat (from KTH, Sweden)

8.4 MY TEAM @ MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY

09/2018–10/2019	Dmitry Kamzolov
09/2018–10/2019	Vladislav Elsukov
09/2018–10/2019	Igor Sokolov (now: PhD student in my team at KAUST)
08/2018–10/2019	Egor Shulgin (now: PhD student in my team at KAUST)
10/2017–10/2019	Eduard Gorbunov (now: Postdoc at MBZUAI)
10/2017–08/2018	Dmitry Kovalev (now: Postdoc at Université catholique de Louvain)
10/2017–08/2018	Elnur Gasanov (now: PhD student in my team at KAUST)

8.5 MY TEAM @ UNIVERSITY OF EDINBURGH

09/2016–07/2017	PhD student: Filip Hanzely (transferred to KAUST after 1 year in Edinburgh to follow me, with an MS degree with distinction)
03/2016–07/2016	Postdoc: Robert M. Gower
10/2015–06/2019	PhD student: Nicolas Loizou (now: Postdoc, MILA, Montréal)
10/2015–02/2017	PhD student: Theo Pavlakou (now: Google; 2nd advisor; main advisor: Iain Murray)
03/2015–03/2016	PhD student: Robert M. Gower (now: Assistant Prof. at Télécom ParisTech)
03/2015–06/2015	Visiting PhD student: Luca Bravi (from University of Florence)
10/2014–03/2015	Postdoc: Ademir Ribeiro (now: Associate Prof. at University of Paraná)
09/2014–11/2017	PhD student: Dominik Csiba (now: Algo Lead at Nozdormu, Slovakia)
08/2013–07/2017	PhD student: Jakub Konečný (now: Research Scientist, Google)
12/2013–08/2015	Postdoc: Zheng Qu (now: Assistant Prof. at University of Hong Kong)
09/2012–02/2013	Visiting PhD student: Minnan Luo (now: Associate Prof. at Xi'an Jiaotong University)

[27] I have supervised Dmitry Kovalev's BS thesis at MIPT.
[28] I have supervised Slavomír Hanzely's BS thesis at Comenius University.
[29] Viktor Lukáček left after spending 1 semester at KAUST as he realized PhD was not the right path for him.

10/2012–07/2014	Postdoc: Olivier Fercoq (now: Assistant Prof. at Télécom ParisTech)
02/2012–07/2014	Postdoc: Rachael Tappenden (now: Assistant Prof. at University of Canterbury)
01/2012–06/2012	Postdoc: Jakub Mareček (now: IBM Research, Dublin)
09/2010–03/2014	PhD student: Martin Takáč (now: Associate Prof. at Mohammed bin Zayed University of Artificial Intelligence, UAE)
2010–2015	Supervised 20 MSc Dissertations
2010–2015	Supervised 7 undergraduate students supported by research scholarships (EPSRC, Nuffield, College, . . .)

8.6 MY TEAM: AWARDS, RECOGNITIONS & NOTABLE ACHIEVEMENTS[30]

2025 (Burlachenko)	Accepts a Quantitative Research Scientist position at Abu Dhabi Ihnvestment Authority (ADIA), Abu Dhabi, UAE
2025 (Yi)	Accepts a Research Scientist position at META, California, USA
2024 (Tyurin)	Joins Skoltech as an **Assistant Professor** & AI Research Institute (AIRI) as a **Team Leader**
2024 (Yi)	Oral at NeurIPS 2024
2024 (Ilin)	Oral at NeurIPS 2024
2024 (Burlachenko)	Oral at NeurIPS 2024
2024 (Tyurin)	**4 papers accepted at NeurIPS 2024**
2024 (Tyurin)	Spotlight at NeurIPS 2024
2024 (Gruntkowska)	Spotlight at NeurIPS 2024
2024 (Gruntkowska)	Nominated by KAUST for Apple Scholarship
2024 (Malinovsky)	**ICML 2024 Best Reviewer**
2024 (Gruntkowska)	Dean's List[31], Statistics, KAUST
2024 (Malinovsky)	Dean's List, Applied Mathematics and Computational Science, KAUST
2024 (Sadiev)	Dean's List, Computer Science, KAUST
2023 (Tyurin)	**4 papers accepted at NeurIPS 2023**
2023 (Sun)	Dean's List[32], Computer Science, KAUST
2023 (Burlachenko)	Dean's List, Computer Science, KAUST
2023 (Sadiev)	Dean's List, Computer Science, KAUST
2023 (S. Hanzely)	Dean's List, Applied Mathematics and Computational Science, KAUST
2023 (Malinovsky)	Dean's List, Applied Mathematics and Computational Science, KAUST
2023 (Mishchenko[33])	**ICML 2023 Outstanding Paper Award (0.09% success rate)**
2023 (Mishchenko)	**Action Editor, Transactions on Machine Learning Research (TMLR)**
2023 (Gruntkowska)	Dean's Award (Statistics)[34], KAUST
2023 (Maranjyan)	Dean's Award (Computer Science), KAUST
2023 (Mishchenko)	Joins Samsung AI, Cambridge, UK, as a **Research Scientist**
2022 (Kovalev)	**6 papers accepted at NeurIPS 2022**
2022 (Burlachenko)	Grant from AMD Inc (two GPUs)
2022 (Beznosikov[35])	**NeurIPS 2022 Top Reviewer**[36]
2022 (Tyurin)	**NeurIPS 2022 Top Reviewer**
2022 (Gorbunov)	**NeurIPS 2022 Top Reviewer**
2022 (Malinovsky)	**NeurIPS 2022 Top Reviewer**
2022 (Sokolov)	**NeurIPS 2022 Top Reviewer**

[30] All travel grant awards are excluded.

[31] In 2024, given to top 20% students at KAUST annually. Carries a 2,500 USD cash prize.

[32] Given to top 25% students at KAUST annually. Carries a 2,500 USD cash prize.

[33] Former PhD student

[34] A financial add-on to the KAUST Fellowship, worth 6,000 USD annually, given to a few best incoming students by the Dean.

[35] Former intern.

[36] https://neurips.cc/Conferences/2022/ProgramCommittee

2022 (Safaryan)	**NeurIPS 2022 Top Reviewer**
2022 (Mútny[37])	**NeurIPS 2022 Top Reviewer**
2022 (Gower[38])	**NeurIPS 2022 Top Reviewer**
2022 (Kovalev)	Joins Université catholique de Louvain as a **postdoc** with Yurii Nesterov
2022 (Malinovsky)	**2022 CEMSE Academic Excellence Award**[39]
2022 (Shulgin)	**ICML 2022 Outstanding (Top 10%) Reviewer**[40]
2022 (Gasanov)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Gorbunov)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Khaled)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Condat)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Sadiev)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Tyurin)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Sokolov)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Horváth)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Szlendak)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Mishchenko)	**ICML 2022 Outstanding (Top 10%) Reviewer**
2022 (Sadiev)	Dean's Award, KAUST
2022 (Sadiev)	KAUST Doctoral Development Fellowship
2022 (Szlendak)	Dean's Award (Applied Mathematics), KAUST
2022 (Szlendak)	KAUST Doctoral Development Fellowship
2022 (Shulgin)	Research Internship at Apple, Cambridge, UK
2022 (S. Hanzely)	Research Internship at the Flatiron Institute, New York, USA
2022 (S. Hanzely)	Research Internship at the MBZUAI, Abu Dhabi, KSA
2022 (Malinovsky)	Research Internship at the CISPA Helmholtz Center for Information Security, Saarbrucken, Germany
2022 (Gorbunov)	Joins **Mohamed bin Zayed University of Artificial Intelligence**, Abu Dhabi, UAE, as a **Postdoc**
2022 (Horváth)	Joins **Mohamed bin Zayed University of Artificial Intelligence**, Abu Dhabi, UAE, as an **Assistant Professor**
2022 (Safaryan)	**AISTATS 2022 Top Reviewer**
2022 (Loizou)	Joins **The Johns Hopkins University as an Assistant Professor** in the Department of Applied Mathematics & Statistics, and the Mathematical Institute for Data Science (MINDS), with a secondary appointment in Computer Science
2022 (Khaled)	Joins **Princeton University** as a **PhD Student in the ECE Department**[41]
2022 (Gower[42])	**Action Editor, Transactions of Machine Learning Research (TMLR)**
2021 (Malinovsky)	**2021 CEMSE Student Research Excellence Award**[43]
2021 (Kovalev)	**2021 CEMSE Student Research Excellence Award**[44]
2021 (Horváth)	**2021 Al-Kindi Statistics Research Student Award**[45]
2021 (Mishchenko)	**Rising Stars in Data Science**; invited talk to a workshop at the University of Chicago[46]

[37] Former intern.

[38] Former PhD student.

[39] Carries a $2,500 cash prize.

[40] https://icml.cc/Conferences/2022/Reviewers

[41] https://rka97.github.io

[42] Former PhD student.

[43] Given annually to a handful of the best Applied Mathematics students at KAUST. "The recipients exemplify the highest of academic standards and represent our confidence in your future contributions to the KAUST community, academia, and science." Carries a $1,000 cash prize.

[44] Given annually to a handful of the best Computer Science students. "The recipients exemplify the highest of academic standards and represent our confidence in your future contributions to the KAUST community, academia, and science."

[45] Given annually to a handful of the best Statistics students at KAUST. "The recipients exemplify the highest of academic standards and represent our confidence in your future contributions to the KAUST community, academia, and science."

[46] The Rising Stars in Data Science workshop at the University of Chicago focuses on celebrating and fast tracking the careers of exceptional data scientists at a critical inflection point in their career: the transition to postdoctoral scholar, research

2021 (Gorbunov)	**NeurIPS 2021 Outstanding (Top 8%) Reviewer Award**
2021 (Mishchenko)	**NeurIPS 2021 Outstanding (Top 8%) Reviewer Award**
2021 (Shulgin)	Research Internship at Samsung AI Research Center, Cambridge, UK
2021 (Horváth)	Research Internship at Facebook AI Research, Canada
2021 (Mishchenko)	**ICML 2021 Top 10% Reviewer**
2021 (Gorbunov)	**ICML 2021 Top 10% Reviewer**
2021 (Mishchenko)	**ICML 2021 Expert Reviewer**
2021 (F. Hanzely)	**ICML 2021 Expert Reviewer**
2021 (Gorbunov)	**ICML 2021 Expert Reviewer**
2021 (Condat)	**ICML 2021 Expert Reviewer**
2021 (Kovalev & Gasanov)	**Best Student Paper Award** at the International Workshop on Federated Learning for User Privacy and Data Confidentiality in Conjunction with ICML 2021 (for joint paper [166])
2021 (Kovalev)	**Ilya Segalovich Prize for Young Researchers**[47]
2021 (Mishchenko)	**Most Popular Spotlight Talk** (2nd place) at KAUST Conference on AI
2021 (Mishchenko)	**ICLR 2021 Outstanding Reviewer Award**
2021 (Gorbunov)	**ICLR 2021 Outstanding Reviewer Award**
2020 (F. Hanzely)	Joined **Toyota Tech. Institute at Chicago as a Research Assistant Professor**
2020 (Mishchenko)	**2020 CEMSE Student Research Excellence Award**[48]
2020 (Horváth)	**Best Paper Award at the NeurIPS 2020 Workshop on Scalability, Privacy, and Security in Federated Learning** (for joint paper [135])
2020 (Loizou)	**Runner Up for OR Society Best Doctoral Dissertation Prize**[49] (for year 2019)
2020 (Horváth)	**NeurIPS 2020 Best Reviewer Award**[50]
2020 (Gorbunov)	**NeurIPS 2020 Best Reviewer Award**
2020 (F. Hanzely)	**NeurIPS 2020 Best Reviewer Award**
2020 (Condat)	**NeurIPS 2020 Best Reviewer Award**
2020 (Khaled)	**NeurIPS 2020 Best Reviewer Award**
2020 (Horváth)	Research Internship at Samsung AI Research Center, Cambridge, UK
2020 (Mishchenko)	Research Internship at Google, USA (performed remotely due to Covid-19)
2020 (Kovalev)	**Ilya Segalovich Prize for Young Researchers**[51]
2020 (Burlachenko)	Dean's Award, KAUST
2020 (Malinovsky)	Dean's Award, KAUST
2020 (Mishchenko)	**AAAI 2020 Outstanding Program Committee Member Award** (awarded to top 12 out of over 6,000 reviewers)
2019 (Mishchenko)	**NeurIPS 2019 Best Reviewer Award**
2019 (S. Hanzely)	Dean's Award, KAUST
2019 (F. Hanzely)	Research Internship at Google, New York
2019 (Horváth)	Research Internship at Amazon, Berlin
2019 (Sailanbayev)	Research Internship at Intel, Germany
2018 (Kovalev)	Dean's Award, KAUST
2018 (Loizou)	Research Internship at Facebook AI Research (FAIR), Montréal
2018 (Mishchenko)	Research Internship at Amazon, Seattle
2018 (F. Hanzely)	Research Internship at Microsoft Research (with Lin Xiao)
2018 (F. Hanzely)	Research Internship at Amazon, Berlin, Scalable Machine Learning Group

scientist, industry research position, or tenure track position. An event associated with the The Center for Data and Computing (CDAC) at the University of Chicago.

[47] Four awards were given; each award carries a cash prize of 1,000,000 RUB (≈ 14,000 USD).

[48] One of 5 awards given to KAUST Computer Science students.

[49] The OR Society was created in April 1948 as the Operational Research Club, becoming the OR Society in 1953. It is the world's oldest-established learned society catering to the OR profession and one of the largest in the world, with members in 53 countries https://en.wikipedia.org/wiki/Operational_Research_Society.

[50] https://icml.cc/Conferences/2020/Reviewers

[51] Nine awards were given in the area of Computer Science; each award carries a cash prize of 350,000 RUB (≈ 5,000 USD).

2018 (Horváth)	**Best DS^3 Poster Award**[52], Paris (1st Prize; for joint paper [81])
2018 (Doikov)	**Best Talk Award**[53], Voronovo, Russia (1st Prize; for joint paper [69])
2018 (F. Hanzely)	WEP Best Poster Award (3rd Place), KAUST
2017 (Mishchenko)	Dean's Award, KAUST
2017 (Lukáček)	Dean's Award, KAUST
2017 (F. Hanzely)	Dean's Award, KAUST
2017 (Gower)	**18th IMA Leslie Fox Prize**[54] (2nd Prize; for joint paper [39])
2016 (Csiba)	Postgraduate Essay Prize, School of Mathematics, University of Edinburgh
2016 (F. Hanzely)	**CASE PhD Studentship** (£93,333 award; 3/4 from EPSRC, 1/4 from Amazon)
2016 (Loizou)	A. G. Leventis Foundation Grant for PhD studies
2015 (Takáč)	**OR Society Best Doctoral Dissertation Prize** (for year 2014)
2015 (Loizou)	A. G. Leventis Foundation Grant for PhD studies
2015 (Loizou)	Principal's Career Development Scholarship[55] (in Data Science)
2015 (Kisiala)	Best Student Prize[56], OR MSc Programme, School of Mathematics, Edinburgh
2015 (Fercoq)	**17th IMA Leslie Fox Prize** (2nd Prize; for joint paper [21])
2015 (Csiba)	**Best Contribution Award** (2nd Prize; for joint paper [35]), Workshop: Optimization and Big Data, Edinburgh. Committee: Arkadi Nemirovskii (Georgia Tech) and Rodolphe Jenatton (Amazon)
2015 (Konečný)	**BASP Frontiers Best Contribution Award** (1st prize in the field of signal processing; for joint paper [20]), Villars-sur-Ollon, Switzerland
2014 (Konečný)	**Google European Doctoral Fellowship**[57] ($180,000 unrestricted gift funding Jakub's PhD for 3 years)
2014 (Csiba)	Principal's Career Development Scholarship (in Data Science)
2013 (Konečný)	Principal's Career Development Scholarship (in Data Science)
2013 (Takáč)	**16th IMA Leslie Fox Prize** (2nd Prize; for joint paper [10])
2013 (Takáč)	SIAM Certificate in Recognition of Outstanding Efforts and Accomplishments, on behalf of the SIAM Chapter at the University of Edinburgh for academic year 2012–2013
2012 (Takáč)	**INFORMS Computing Society Best Student Paper Prize** (sole runner up; for joint paper [8]), Phoenix, Arizona
2012 (Banks-Watson)	Best Student Prize, OR MSc Programme, School of Mathematics, Edinburgh
2012 (Takáč)	**Best Talk Award**, SIAM National Student Chapter Conference, Manchester, UK
2012 (Takáč)	Best Talk Award, Edinburgh Postgraduate Colloquium, University of Edinburgh
2012 (Takáč)	Alice Margaret Campbell Bequest Fund Award for success in 1st year of PhD
2011 (Takáč)	Certificate of Appreciation, 24th Biennial Conf. on Numerical Analysis, Glasgow, UK
2011 (Takáč)	Best Poster Award, SIAM Student Chapter Conference, Edinburgh, UK

[52] DS^3 stands for Data Science Summer School, held at École Polytechnique, Paris, during June 25–29, 2018. There were 170 posters in the competition, from MS and PhD students, and postdocs. Samuel's poster, based on joint work [81], won the main prize, which also attracted a 500 EUR check.

[53] Event: "Traditional Youth School in Control, Information and Optimization", organized by Boris Polyak.

[54] "The Leslie Fox Prize is a biennial prize established in 1985 by the IMA in honour of mathematician Leslie Fox (1918-1992). The prize honours young numerical analysts worldwide (any person less than 31 years old), and applicants submit papers for review. A committee [...] awards First Prize and Second Prizes based on mathematical and algorithmic brilliance in tandem with presentational skill"

[55] Principal's Career Development Scholarship: A highly competitive scholarship offered to 3 incoming PhD students in mathematics at the University of Edinburgh each year.

[56] For best performance in courses and MSc Dissertation, which I supervised.

[57] Google quote: "Nurturing and maintaining strong relations with the academic community is a top priority at Google. Today, we're announcing the 2014 Google PhD Fellowship recipients. These students, recognized for their incredible creativity, knowledge and skills, represent some of the most outstanding graduate researchers in computer science across the globe. We're excited to support them, and we extend our warmest congratulations."

8.7 MY TEAM: SELECTED PRIOR/INDEPENDENT ACHIEVEMENTS[58]

2023 (Záhorský)	Member, Slovak Committee of Mathematical Olympiad
2022 (Záhorský)	Coordinator, European Girls' Mathematical Olympiad, Hugary
2022 (Condat)	World's Top 2% Scientist by Stanford[59]
2022 (Condat)	Meritorious Service Award from the journal Mathematical Programming[60]
2022 (Burlachenko)	Second Place, KAUST Chess Tournament
2021 (Maranjyan)	Outstanding Final Project Award[61], Yerevan State University, Armenia
2021 (Condat)	World's Top 2% Scientist by Stanford
2021 (Condat)	Associate Editor, IEEE Transactions on Signal Processing
2020 (Záhorský)	Deputy Leader, 14th Middle European Mathematical Olympiad, virtual
2020 (Condat)	World's Top 2% Scientist by Stanford
2020 (Basyoni)	National Deputy Leader and Head Coach at the International Olympiad of Informatics, Saudi Arabia
2019 (Záhorský)	Deputy Leader, 13th Middle European Mathematical Olympiad, Pardubice, Czech Republic
2019 (Panferov)	Gold Medal, International Physics Olympiad, Tel Aviv, Israel
2019 (Riabinin)	Winner, Phystech Olympiad in Physics, Dolgoprudny, Russia
2019 (Basyoni)	National Deputy Leader and Head Coach at the International Olympiad of Informatics, Saudi Arabia
2019 (Li)	Tsinghua Outstanding Doctoral Dissertation Award
2017 (Záhorský)	Silver Medal, 59th International Mathematical Olympiad, Cluj-Napoca, Romania (representing Slovakia)
2018 (Riabinin)	Prizewinner, Regional Stage of the All Russian Olympiad in Physics, Russia
2018 (Riabinin)	2nd Place, City Physics Olympiad, Nizhny Novgorod, Russia
2018 (Riabinin)	Prizewinner, Phystech Olympiad in Mathematics, Dolgoprudny, Russia
2018 (Mishchenko & Sailanbayev)	80th Place, 2018 IEEEXtreme programming competition[62]
2017 (Záhorský)	Honorable Mention, 58th International Mathematical Olympiad, Rio de Janeiro, Brazil (representing Slovakia)
2017 (Ilin)	Captain of the Russian team @ International Young Physicists Tournament, Singapore/Russia
2017 (Karagulyan)	Second Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2017 (S. Hanzely)	8–10th Place, Vojtech Jarník International Mathematical Competition (1st place among Czech and Slovak contestants)
2017 (Horváth)	37th Place, Vojtech Jarník International Mathematical Competition, Ostrava, Czech Republic
2016 (Záhorský)	Silver Medal, 10th Middle European Mathematical Olympiad, Vöcklabruck, Austria (representing Slovakia)
2016 (Karagulyan)	2nd Prize, Mirror of William Lowell Putnam Mathematical Competition
2016 (Malinovsky)	Abramov's Scholarship for students with the best grades at MIPT
2016 (S. Hanzely)	Participation, 57th International Mathematical Olympiad, Hong Kong
2016 (S. Hanzely)	3rd Place, Slovak National Mathematical Olympiad
2016 (S. Hanzely)	1st Place, Slovak Mathematical Olympiad, Regional Round

[58] These awards are independent of my input, and were in most cases obtained before joining my team.

[59] https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/4?fbclid=IwAR0u4xhKMuKGIsi_prZLxOIOaMPzV-LNCmoIlDYua90eybIVIyE6Sl70vyc

[60] Mathematical Programming is the leading optimization journal. "The Meritorious Service Award was created to acknowledge these continued efforts. In 2022 our Editorial Board assessed the referees who have demonstrated exceptional diligence in their service to the journal."

[61] Awarded to 6 students from more than 250 students for best undergraduate thesis.

[62] 4,000 teams (of size 3) from all over the world competed in a 24-hour time span against each other to solve a set of programming problems. Konstantin and Alibek scored high despite being just 2 on the team!

2016 (S. Hanzely)	1st Place, Slovak Informatics Olympiad, Regional Round
2016 (Horváth)	36th Place, Vojtech Jarník International Mathematical Competition, Ostrava, Czech Republic
2015 (Karagulyan)	Third Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2016 (Horváth)	3rd Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2016 (Sailanbayev)	Semifinalist, ACM ICPC Programming Contest, NEERC region, Almaty, Kazakhstan
2015 (Karagulyan)	Second Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2015 (Karagulyan)	Semifinalist, ACM-ICPC Programming Contest, NEERC region, Tbilisi, Georgia
2015 (S. Hanzely)	Bronze Medal, Middle European Mathematical Olympiad
2015 (S. Hanzely)	2nd Place, Slovak Informatics Olympiad, Regional Round
2015 (Sailanbayev)	2nd Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2015 (Mishchenko)	1st Prize, HSE Olympiad in Applied Mathematics and Informatics, Moscow, Russia
2014 (Karagulyan)	Semifinalist, ACM-ICPC Programming Contest, NEERC region, Tbilisi, Georgia
2014 (Malinovsky)	Bronze Medal, International Zhautykov Olympiad in Physics
2014 (Malinovsky)	Participant, All-Russian Physics Olympiad
2014 (S. Hanzely)	1st Place, Slovak Mathematical Olympiad, Regional Round
2014 (Kovalev)	Honorable Mention, 15th Asian Physics Olympiad, Singapore
2014 (Kovalev)	Winner, All Russian Mathematics Olympiad (Moscow Region)
2014 (Kovalev)	Winner, All Russian Computer Science Olympiad (Moscow Region)
2014 (Kovalev)	Prizewinner, All Russian Physics Olympiad
2014 (Mishchenko)	3rd Prize, MIPT Student Mathematical Olympiad, Moscow, Russia
2014 (Horváth)	18th Place, National Mathematical Olympiad, Bratislava, Slovakia
2014 (Horváth)	1st Place, Nitra Region Mathematical Olympiad, Category A, Slovakia
2014 (Sailanbayev)	2nd Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2014 (Loizou)	Top 1% in Mathematics at National and Kapodestrian University of Athens, Greece
2014 (Csiba)	Best Student Work in Applied Informatics in Czech and Slovak Republic, Annual Student Scientific Conference, Ústí nad Labem, Czech Republic
2014 (F. Hanzely)	2nd Prize (101st place), International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2014 (F. Hanzely)	9th Place, V. Jarník International Mathematical Competition, Ostrava, Czech Republic
2014 (Lukáček)	26th Place, Vojtech Jarník International Mathematical Competition, Ostrava, Czech Republic
2013 (Karagulyan)	Semifinalist, ACM-ICPC Programming Contest, NEERC region, Tbilisi, Georgia
2013 (Karagulyan)	2nd Prize, Mirror of William Lowell Putnam Mathematical Competition
2013 (Malinovsky)	Prizewinner, All-Russian Physics Olympiad
2013 (S. Hanzely)	1st Place, Slovak Mathematical Olympiad, Regional Round
2013 (Kovalev)	Winner, All Russian Physics Olympiad
2013 (Sailanbayev)	Silver Medal, International Mathematical Olympiad, Santa Marta, Colombia
2013 (F. Hanzely)	Bronze Medal, International Mathematical Olympiad, Santa Marta, Colombia
2013 (Karagulyan)	Honourable Mention, International Mathematical Olympiad, Santa Marta, Colombia
2013 (Sailanbayev)	1st Place, National Mathematical Olympiad, Kazachstan
2013 (F. Hanzely)	1st Place, Slovak National Round of Mathematical Olympiad, Košice, Slovakia
2013 (Sailanbayev)	Gold Medal, International Zhautykov Olympiad, Almaty, Kazakhstan
2013 (Lukáček)	20th Place, Vojtech Jarnik International Mathematical Competition, Ostrava, Czech Republic
2012 (Karagulyan)	Honourable Mention, International Mathematical Olympiad, Mar del Plata, Argentina
2012 (Kovalev)	Prizewinner, All Russian Physics Olympiad

2012 (Lukáček)	3rd Prize, International Mathematical Competition for University Students, Blagoevgrad, Bulgaria
2012 (Mishchenko)	1st Prize, Moscow Mathematical Olympiad, Moscow, Russia
2012 (Mishchenko)	1st Prize, PhysTech International Olympiad in Mathematics
2012 (Basyoni)	Silver Medal[63], International Mathematical Olympiad, Mar del Plata, Argentina
2012 (Sailanbayev)	Bronze Medal, International Mathematical Olympiad, Mar del Plata, Argentina
2012 (Sailanbayev)	Silver Medal, Balkan Mathematical Olympiad, Antalya, Turkey
2012 (F. Hanzely)	Bronze Medal, Middle European Mathematical Olympiad, Solothurn, Switzerland
2012 (Csiba)	FIDE International Master in Chess
2012 (Csiba)	3rd Prize, International Mathematical Competition, Blagoevgrad, Bulgaria
2012 (Konečný)	2nd Prize, International ChaLearn Competition, One shot learning of gestures from Microsoft Kinect videos
2012 (Fercoq)	Gaspard Monge Prize "for best PhD thesis defended in France 2012 in mathematics or computer science, with significant contributions to Optimization and Operations Research"
2012 (Luo)	Google Anita Borg Scholarship, China
2012 (Lukáček)	2nd Place, International Correspondence Seminar in Mathematics (iKS)
2011 (Lukáček)	Bronze Medal (26th Place), Middle European Mathematical Olympiad, Varaždin, Croatia
2010 (Konečný)	Honourable Mention, International Mathematical Olympiad, Astana, Kazachstan
2010 (Csiba)	Honourable Mention, Middle European Mathematical Olympiad, Žilina, Slovakia
2008 (Konečný)	Honourable Mention, Middle European Mathematical Olympiad, Olomouc, Czech Republic
2007–2009 (Takáč)	Winner, 3rd Place and Honourable Mention (twice), International Student Scientific Conference, Czech and Slovak Republic

9. TALKS

9.1 TALKS: SUMMARY

I have given **more than 230 research talks**[64] at conferences, workshops and seminars worldwide (Australia, Austria, Belgium, Brazil, Canada, Chile, China, Cuba, France, Germany, Greece, Hong Kong, Hungary, India, Japan, Mongolia, Morocco, Netherlands, Portugal, Russia, Saudi Arabia, Slovakia, Slovenia, Spain, Switzerland, UAE, United Kingdom, Uruguay, USA). Out of these, **50+ are plenary talks** at conferences and workshops, **10+ are invited PhD courses and tutorials**, **60+ are seminar talks**, and the rest are invited and contributed conference talks. I regularly give talks at the premier international optimization conferences (each taking place once in 3 years): Int. Symposium on Mathematical Programming (Rio'06, Chicago'09, Berlin'12, Pittsburgh'15, Bordeaux'18), SIAM Conf. on Optimization (Darmstadt'11, San Diego'14, Vancouver'17, Hong Kong'20), Int. Conf. on Continuous Optimization (Ontario'07, Santiago'10, Lisbon'13, Tokyo'16, Berlin'19).

9.2 PLENARY TALKS[65]

10/2024	**International Conference on Computational Optimization (ICOMP-2024)**, Innopolis, Russian Federation
09/2024	**2nd IEEE International Conference on Federated Learning Technologies and Applications (FLTA 2024)**, Valencia, Spain

[63] Historically the first silver medal at IMO by Saudi Arabia.

[64] All my talks are listed on https://www.maths.ed.ac.uk/~prichtar/i_talks.html

[65] For the purpose of this CV, a plenary talk is any talk not given to a sub-audience; or a talk explicitly labeled as a plenary/keynote talk by the organizers of the workshop/conference. I am excluding here talks at events I organized or co-organized and declined invites to deliver a plenary talk. I am including past talks, and accepted invites to give a talk.

08/2024 **ALGOPT2024 workshop on Algorithmic Optimization: Tools for AI and Data Science**, Louvain-la-Neuve, Belgium. Celebration of Yurii Nesterov's 50 years long research career in optimization.

06/2024 **Federated Learning for Computer Vision (FedVision) Workshop**, CVPR, Seattle, USA

06/2024 **Applied Algorithms for Machine Learning – a Workshop on the Future of Computation**, Paris, France

06/2024 **One World Optimization Seminar in Vienna**, Erwin Schrödinger International Institute for Mathematics and Physics, Vienna, Austria

04/2024 **Workshop on Nonsmooth Optimization and Applications (NOPTA 2024)**, In Honor of the 75th Birthday of Boris Mordukhovich, University of Antwerp, Belgium

02/2024 **Apple Workshop on Privacy Preserving Machine Learning**, Cupertino, California, USA

12/2023 **NeurIPS 2023 Workshop on Federated Learning in the Age of Foundation Models**, New Orleans, Louisiana, USA

07/2023 **ICML 2023 Workshop. Federated Learning and Analytics in Practice: Algorithms, Systems, Applications, and Opportunities**, Honolulu, Hawaii

07/2023 **Federated and Collaborative Learning Workshop**, Simons Institute, Berkeley, USA

07/2023 **Mathematics in Armenia: Advances and Perspectives** (80th anniversary of the foundation of the Armenian National Academy of Sciences), Yerevan, Armenia

12/2022 **Optimization in the Big Data Era**, Institute of Mathematical Sciences, National University of Singapore, Singapore, Optimization in the Big Data Era, Institute for Mathematical Sciences, National University of Singapore, Singapore

11/2022 **KAUST Workshop on Scientific Computing and Machine Learning**, KAUST

11/2022 **Google's 2022 Workshop on Federated Learning and Analytics**, virtual

10/2022 **MBZUAI Workshop on Collaborative Learning: From Theory to Practice**, Abu Dhabi (invited by Michael I. Jordan)

09/2022 **CrossFL: Cross-Community Federated Learning: Algorithms, Systems and Co-designs**, workshop associated with the MLSys conference, Santa Clara, USA

06/2022 **Mathematics of Complex Data**, KTH Royal Institute of Technology, Stockholm, Sweden

05/2022 **Workshop on Stochastic Numerics, Statistical Learning, Optimization, Approximations, with Applications**, KAUST, Saudi Arabia

04/2022 **Lagrange Workshop on Federated Learning**, Lagrange Mathematics and Computing Research Center, virtual

04/2022 **Apple's Workshop on Privacy Preserving Machine Learning**, virtual

02/2022 **Dagstuhl Seminar**, Theory of Randomized Optimization Heuristics, 3 talks, Germany

12/2021 **NeurIPS 2021 Workshop. New Frontiers in Federated Learning: Privacy, Fairness, Robustness, Personalization and Data Ownership**, Virtual

11/2021 **KAUST-GSAI Joint Workshop on Advances in AI**, Virtual

11/2021 **Google Federated Learning and Analytics Workshop**, Virtual

07/2021 **Optimization Without Borders** (celebration of the 65th Birthday of Yurii Nesterov), Sirius University, Sochi, Russia

04/2021 **KAUST Conference on Artificial Intelligence**, 2 keynote talks, Thuwal, Saudi Arabia

08/2020 **Workshop on Privacy Preserving Machine Learning**, Apple, Virtual Workshop

07/2020 **ICML 2020 Workshop: Beyond First Order Methods in ML Systems**, Virtual

06/2020 **Mathematics of Data Science**, Virtual Conference, United Kingdom

10/2019 **School-Conference "Approximation and Data Analysis"**, Nizhny Novgorod, Russia

09/2019 **Workshop on Optimization, Statistics and Numerical Methods**, Moscow Institute of Physics and Technology, Dolgoprudny, Russia (workshop organized around my visit to MIPT)

09/2019 **50 Years of Mathematics in Bielefeld - the (new) Unity of Mathematics**, Bielefeld, Germany

09/2019 **DIMACS Workshop on Randomized Numerical Linear Algebra, Statistics, and Optimization,** Rutgers University, USA

06/2019 **Approximation, Sampling, and Compression in High Dimensional Problems**, Isaac Newton Institute for Mathematical Sciences Program on "Approximation, Sampling and Compression in Data Science", Cambridge University, UK

02/2019 **Numerical Algorithms in Nonsmooth Optimization**, Thematic Program: "Modern Maximal Monotone Operator Theory: From Nonsmooth Optimization to Differential Inclusions", Erwin Schrödinger International Institute for Mathematics and Physics (ESI), Vienna, Austria

11/2018 **Statistics and Data Science Workshop**, KAUST, Thuwal, KSA

09/2018 **Randomized Numerical Linear Algebra and Applications**, Program: Data Science, Simons Institute, Berkeley, USA

08/2018 **DIMACS/TRIPODS Workshop: Optimization in Machine Learning**, Lehigh University, Bethlehem, USA

07/2018 **XII Brazilian Workshop on Continuous Optimization**, Foz do Iguaçu, Brazil

10/2017 **Optimization at Work**[66], Moscow Institute of Physics and Technology, Moscow, Russia

09/2017 **Workshop on Decentralized Machine Learning, Optimization and Privacy**, Lille, France

07/2017 **Workshop on Convex Optimization and Applications**, Fields Institute, Toronto, Canada (in honour of 70th birthday of Arkadi Nemirovski)

04/2017 **Visual Computing - Modeling and Reconstruction**, KAUST, Thuwal, KSA

01/2017 **2017 BASP Frontiers Workshop**, Villars-sur-Ollon, Switzerland

11/2016 **Workshop on Distributed Machine Learning**, Telecom ParisTech, Paris, France

11/2016 **SIAM Warwick Student Chapter Conference on Machine Learning and Statistics,** Coventry, UK

10/2016 **41st Woudschoten Conference,** Zeist, Netherlands. Two keynote lectures in the stream "Numerical methods for big data analytics"

09/2016 **Linear Algebra and Parallel Computing at the Heart of Scientific Computing,** a joint event of the Royal Society of Edinburgh and the French Embassy in London, Edinburgh, UK

09/2016 **"OR58": The 58th Annual Conference of the Operational Research Society,** Portsmouth, UK (closing plenary)

06/2016 **2016 Int. Workshop on Modern Optimization and Applications (MOA 2016),** Beijing, China

04/2016 **Einstein Center Mathematical Colloquium "Sparsity: Statistics, Optimization, and Applications"**, Berlin, Germany. "The purpose of this biannual scientific colloquium is bringing together mathematicians, scientists, and engineers to enjoy a series of talks on one topical issue of current or emerging interest to several fields within mathematics."

03/2016 **Computationally and Statistically Efficient Inference for Complex Large-scale Data**, Oberwolfach, Germany

09/2015 **Statistical and Computational Challenges in Large-Scale Data Analysis**, Alan Turing Institute Workshop, Cambridge, UK

09/2015 **LMS Inverse Day: Large-Scale and Nonlinear Inverse Problems**, Edinburgh, UK

04/2015 **Maxwell Institute Probability Day**, Edinburgh, UK

01/2015 **Optimization and Statistical Learning**, Les Houches, France

01/2015 **Theory of Big Data Science**, University College London, UK

12/2014 **Optimization Workshop, Foundations of Computational Mathematics**, Montevideo, Uruguay

11/2014 **46th Conference of Slovak Mathematicians**, Jasná, Slovakia

09/2014 **Mathematical Methods in Economics and Engineering**, Smolenice, Slovakia

07/2014 **Understanding Complex and Large Industrial Data**, Lancaster, UK

05/2014 **9th Int. Conf. on Intelligent Systems: Theories and Applications**, Rabat, Morocco

02/2014 **Stochastic Gradient Methods**, Inst. for Pure and Applied Mathematics, Los Angeles, USA

[66] This event was organized in my honour.

12/2013 **NeurIPS Workshop on Optimization in Machine Learning**, Lake Tahoe, USA. Past plenary speakers: D. Bertsekas, L. Bottou, S. Wright (2008), N. Srebro, L. Vandenberghe, A. Nemirovski (2009), M. Schmidt, Yu. Nesterov (2010), B. Recht, S. Boyd (2011), P. Parillo, F. Bach (2012)

11/2013 **International Conference on Information Technologies and Society**, Slovenia

10/2013 **Parallel and Distributed Algorithms for Inference and Optimization**, Simons Institute for the Theory of Computing, University of California, Berkeley, USA

05/2013 **Big Data Mining**, Imperial College London, UK

03/2013 **Fête Parisienne in Computation, Inference and Optimization**, IHES, Paris, France

03/2013 **Edinburgh SIAM Student Chapter Conference**, Edinburgh, UK

02/2013 **Big Data and Social Media**, Glasgow, UK

01/2013 **Optimization and Statistical Learning**, Les Houches, France

07/2012 **Optimization in Machine Learning**, ICML workshop, Edinburgh, UK

07/2011 **Optimization Workshop, Foundations of Comp. Mathematics**, Budapest, Hungary

05/2011 **Computational Complexity Challenges in Optimization**, Edinburgh, UK

9.3 INVITED LECTURE SERIES, TUTORIALS & SUMMER SCHOOL COURSES

12/2024 **Optimization for Machine Learning** (three lectures), Applied Mathematics School, KAUST, Saudi Arabia

11/2024 **Optimization for Machine Learning** (five lectures), Beijing Institute for Mathematical Sciences and Applications (BIMSA), Beijing, China

02/2024 **Optimization for Machine Learning** (three 50 min lectures), AMCS-STAT School, KAUST, Saudi Arabia

03/2024 Machine Learning Summer School, Okinawa, Japan (declined due to a clash with annual leave)

07/2023 Eastern European Machine Learning Summer School (EEML 2023), Košice, Slovakia

06/2023 **Introduction to Machine Learning 2** (MS course, 28 hours), Dhahran, Saudi Aramco, Saudi Arabia

06/2023 **Introduction to Machine Learning 1** (MS course, 28 hours), Dhahran, Saudi Aramco, Saudi Arabia

07/2023 **Eastern European Machine Learning Summer School**, Košice, Slovakia

11/2022 **Introduction to Optimization 2** (MS course, 28 hours), Dhahran, Saudi Aramco, Saudi Arabia

11/2022 **Introduction to Optimization 1** (MS course, 28 hours), Dhahran, Saudi Aramco, Saudi Arabia

06/2022 **Introduction to Stochastic Gradient Descent Methods** (PhD course, 22.5 hours), School of Mathematics, Physics and Informatics, Bratislava, Slovakia

06/2022 **Introduction to Stochastic Gradient Descent Methods** (PhD course, 18 hours), Vienna Graduate School for Computational Optimization (VGSCO), Vienna, Austria

10/2019 **A Guided Walk Through the ZOO of Stochastic Gradient Descent Methods** (Mini-course, 2.5 hours), School-Conference "Approximation and Data Analysis", Nizhny Novgorod, Russia

09/2019 **A Guided Walk Through the ZOO of Stochastic Gradient Descent Methods** (Mini-course, 5 hours), Moscow Institue of Physics and Technology, Dolgoprudny, Russia

08/2019 **A Guided Walk Through the ZOO of Stochastic Gradient Descent Methods** (Summer School Lectures, 6 hours), International Conference on Continuous Optimization (ICCOPT 2019), Berlin, Germany

02/2019 **Randomized Optimization Methods** (PhD Course, 4.5 hours), Erwin Schrödinger International Institute for Mathematics and Physics (ESI), Vienna, Austria

06/2018 **Stochastic Reformulations in Linear Algebra and Optimization** (Summer School, 2 hours), Control, Information and Optimization, Voronovo, Moscow Region, Russia

04/2018 **Introduction to Optimization for Machine Learning** (short outreach course for selected Saudi university students who previously participated in the Saudi National Mathematical Olympiad or IMO, 4.5 hours), KAUST, Thuwal, KSA

08/2017 **Randomized Optimization Methods** (Summer School, 5 hours), Data Science Summer School (DS^3), École Polytechnique, France. Other courses: Joshua Bengio (Montreal), Deep Learning; Pradeep Ravikumar (CMU), Graphical Models; Csaba Szepesvári (Alberta/Google DeepMind), Bandits

10/2015 **Randomized Methods for Big Data: From Linear Systems to Optimization** (Tutorial), IEEE International Conference on Data Science and Advanced Analytics, Paris, France

2015 **Randomized Algorithms for Big Data Optimization** (PhD Course, 18 hours), Graduate School in Systems, Optimization, Control and Networks – Université catholique de Louvain, Belgium

09/2015 **Optimization in Machine Learning** (PhD Course, 8 hours), Machine Learning Thematic Trimester, Toulouse, France

07/2015 **Modern Convex Optimization Methods for Large-Scale Empirical Risk Minimization** (Tutorial, 2 hours, joint with M. Schmidt), ICML 2015, Lille, France

06/2014 **Randomized Coordinate Descent Methods** (PhD Course, 6 hours), Khronos-Persyval Days "High-Dimensional Learning and Optimization", Grenoble, France

06/2014 **Coordinate Descent Methods** (Lecture, 2 hours), NATCOR PhD Course on Convex Optimization, Edinburgh, UK

02/2014 **Gradient Methods for Big Data** (Tutorial, 3 hours), Big Data: Challenges and Applications, Imperial College London, UK

9.4 TALKS @ RESEARCH SEMINARS

2024 Beijing Institute for Mathematical Sciences and Applications (BIMSA), Tsinghua University, Shanghai Institute for Mathematics and Interdisciplinary Sciences (SIMIS), Peking University, KAUST (2)

2023 CMOR Special Lecture @ Rice University, Qualcomm AI Seminar, Apple, Kempelen Institute of Intelligent Technologies, Slovak Academy of Sciences (2)

2022 Machine Learning NeEDS Mathematical Optimization (virtual), Federated Learning One World Seminar (virtual), KAUST (3), Better AI Meetup Bratislava, Hong Kong Baptist University, One World Seminar Series on the Mathematics of Machine Learning (virtual)

2021 University of Tartu (virtual), Portsmouth (virtual), Kempelen Institute for Intelligent Technologies, Comenius University, MBZUAI (virtual), All Russian Seminar on Optimization (virtual), Federated Learning One World Seminar (virtual; 2), KAUST (3)

2020 ESET, Optimization One World Seminar, Montréal MLOpt Seminar

2019 Huawei

2018 Bratislava, KAUST (2), Warwick, Edinburgh (2)

2017 Imperial College London, KAUST, Plymouth, Cardiff

2016 Cambridge, Edinburgh (3), Stanford (2), KAUST, The Alan Turing Institute, LSE, Southampton, Skoltech, Yandex

2015 Louvain, Oxford, IST Austria, UC Davis, UC Berkeley, Edinburgh

2014 Moscow, Paris, Hong Kong, Edinburgh (3)

2013 UC Berkeley, Google, SAS Inc, Louvain, Edinburgh

2012 Wisconsin, Cambridge, Glasgow, Cardiff, Bratislava

2011 Edinburgh, Oxford, London, Heriot-Watt, Louvain

2010 Birmingham, Nottingham, Southampton

2009 ETH Zürich, Linz, Louvain, Edinburgh (2)

2008 Liége, Bratislava

2007 Cornell (2), Louvain (2)

10. TEACHING[67]

KAUST	Spring 2025	Stochastic Gradient Descent Methods* (CS 331)
	Spring 2024	Stochastic Gradient Descent Methods* (CS 331)
	Spring 2023	Federated Learning* (CS 332)
	Fall 2022	Stochastic Gradient Descent Methods* (CS 331)
	Spring 2022	Federated Learning* (CS 332)
	Fall 2021	Stochastic Gradient Descent Methods* (CS 331)
	Spring 2021	Federated Learning* (CS 332)
	Fall 2020	Stochastic Gradient Descent Methods* (CS 331)
	Spring 2020	Federated Learning* (CS 390T)
	Spring 2019	Contemporary Topics in Machine Learning* (CS 394D)
	Spring 2018	Contemporary Topics in Machine Learning* (CS 394D)
	Fall 2019	Big Data Optimization* (CS 390FF)
	Fall 2018	Big Data Optimization* (CS 390FF)
	Fall 2017	Big Data Optimization* (CS 390FF)
Edinburgh	Spring 2017	Modern Optimization Methods for Big Data Problems*
	Spring 2016	Modern Optimization Methods for Big Data Problems*
	Fall 2012	Discrete Programming and Game Theory*
	Fall 2011	Discrete Programming and Game Theory*
	Fall 2011	Discrete Programming and Game Theory*
	Spring 2015	Optimization Methods in Finance*
	Spring 2014	Optimization Methods in Finance*
	Spring 2013	Optimization Methods in Finance*
	Spring 2012	Optimization Methods in Finance*
	Spring 2011	Optimization Methods in Finance*
	Fall 2012	Game Theory*
	Fall 2011	Game Theory*
	Fall 2010	Game Theory*
	Spring 2013	Computing and Numerics
	Fall 2010	Dynamic & Integer Programming
	Fall 2010	Mathematics for Chemical Engineers
Louvain	Spring 2009	Nonlinear Optimization (with Yu. Nesterov)
Cornell	Spring 2006	Optimization II/Nonlinear Optimization
	Summer 2005	Engineering Probability and Statistics*
	Fall 2003	Engineering Probability and Statistics
	Summer 2003	Engineering Probability and Statistics
	Spring 2004	Optimization II
	Spring 2005	Application of Game Theory and OR to IT
	Spring 2005	Topics in Linear Optimization
	Fall 2006	Combinatorial Optimization (PhD course taught by David Williamson)
Comenius	Fall 1998	Complex Analysis

11. CONFERENCE, STREAM, WORKSHOP & SEMINAR ORGANIZATION[68]

06/2025	The 4th Workshop on Federated Learning for Computer Vision, CVPR 2025 (co-organizer)
07/2024	International Symposium on Mathematical Programming (ISMP) (stream co-organizer with Lin Xiao and Simon Lacoste-Julien)
02/2023	Rising Stars in AI Symposium, KAUST, Thuwal, Saudi Arabia

[67] I have proposed and developed from scratch courses marked with an asterisk. I was the instructor for all courses marked in bold. I was a TA (teaching assistant / tutor) for all other courses.

[68] I am excluding organized conference sessions.

12/2022	Federated Learning Workshop, NeurIPS
03/2022	Rising Stars in AI Symposium, KAUST, Thuwal, Saudi Arabia
05/2021	SIAM Conference on Optimization, Virtual (member of the organizing committee)
06/2020–now	**Federated Learning One World Seminar (FLOW)**[69] (founder and chair of the organizing committee)
11/2019	KAUST-Tsinghua-Industry Workshop on Advances in Artificial Intelligence, KAUST, Thuwal, Saudi Arabia
06/2019	Sparse Approximation and Sampling, The Alan Turing Institute, London
04/2019	A Short Course on Deep Learning and the Latest AI Algorithms, KAUST, Saudi Arabia. A 2-day course delivered by Xavier Bresson, NTU, Singapore
07/2018	International Symposium on Mathematical Programming, Bordeaux, France. Scientific Committee Member for stream 4a: "Machine Learning, Big Data, Cloud Computing, and Huge-Scale Optimization" (with A. d'Aspremont, O. Beaumont and S. Sra)
02/2018	Optimization and Big Data 2018, KAUST (co-organizer with M. Canini)
2017–now	All Hands Meetings on Big Data Optimization, KAUST (a weekly group research seminar)
09/2016	IMA Numerical Linear Algebra and Optimization, Birmingham, UK (co-organizing 2 minisymposia)
12/2015	Mathematical Perspectives on Big Data, a joint meeting of the London and Edinburgh mathematical societies, celebrating 150th anniversary of the former, Edinburgh
12/2015	Theoretical and Computational Approaches to Large-Scale Inverse Problems, Edinburgh (Alan Turing Institute Scoping Workshop)
11/2015	Distributed Machine Learning and Optimization, Edinburgh (Alan Turing Institute Scoping Workshop)
05/2015	Optimization and Big Data 2015, Edinburgh (founder and co-organizer; with Z. Qu)
01/2015	International BASP Frontiers Workshop 2015, Villars-sur-Ollon, Switzerland
12/2014	Workshop: Numerical Algorithms and Intelligent Software, Edinburgh
09/2014	2 minisymposia at 4th IMA Conf. on Numerical Lin. Alg. and Optimisation, Birmingham
05/2014	Coordinate Descent Methods Symposium at the SIAM Conference on Optimization, San Diego (24 speakers)
2014–2017	All Hands Meetings on Big Data Optimization, University of Edinburgh (a weekly interdisciplinary research seminar attended by faculty, postdocs and PhD students from the Schools of Mathematics, Engineering and Informatics and Heriot-Watt University)
07/2013	Cluster Co-Chair, "Convex and Nonsmooth Optimization" at the International Conference on Continuous Optimization (ICCOPT), Lisbon, Portugal (with F. Glineur). We organized 23 invited sessions in the cluster (=70 speakers). ICCOPT is the premiere conference in continuous optimization, taking place once in 3 years. Our cluster was twice as large as the second largest cluster.
05/2013	Optimization and Big Data 2013, Edinburgh, 64 participants (founder and organizer)
05/2012	Optimization and Big Data 2012, Edinburgh, 62 participants (founder and organizer)
07/2011	2 minisymposia at 3rd IMA Conf. on Numerical Linear Algebra and Optimisation, Birmingham
07/2011	2 minisymposia at 24th Biennial Conf. on Numerical Analysis, Glasgow

12. COMMISSIONS OF TRUST

12.1 EXTERNAL ACTIVITIES

2025	**Area Chair**, NeurIPS
2025	**Area Chair**, ICML
2025	**Area Chair**, ICLR
2024–2025	**Scientific Committee Member**, 2nd International Olympiad in Artificial Intelligence (IOAI)

[69] https://sites.google.com/view/one-world-seminar-series-flow/home

2024	**Distinguished Jury Member**, the AGBA GenAI Innovation Series for evaluating the innovations for 15th Edition of annual Aegis Graham Bell Awards, supported by Ministry of Electronics and Information Technology, Ministry of Education, Government of India, New Delhi and Department of Science & Technology, Government of India, Country Partner Australian Trade and Investment Commission (Austrade)
2024–now	**Action Editor**, Journal of Machine Learning Research (JMLR)
2024	**Area Chair**, NeurIPS
2024	**Area Chair**, ICML
2024	**Area Chair**, ICLR
2023–now	**Associate Editor**, Numerische Mathematik
2023	External PhD Examiner for Lie He, EPFL (advisor: Martin Jaggi)
2023	External PhD Examiner for Othmane Marfoq, Inria Sophia Antipolis (advisor: Giovanni Neglia)
2023	Invited to serve as Area Chair for COLT 2023 (declined)
2023	**Area Chair**, NeurIPS
2023	**Area Chair**, ICML
2023	**Area Chair**, ICLR
2022–2024	**Action Editor**, Transactions on Machine Learning Research (TMLR)
2022	**Area Chair**, NeurIPS
2022	**Area Chair**, ICML
2022	**Area Chair**, ICLR
2021	Habilitation[70] Committee Member for Dr. Aurélien Bellet, Inria Lille - Nord Europe, France (other committee members: Francis Bach, Kamalika Chaudhuri and Catuscia Palamidessi)
2021	**Area Chair**, NeurIPS, virtual
2021	**Area Chair**, ICML, virtual
2021–2022	**Area Editor**[71], Journal of Optimization Theory and Applications
2021	Reviewer of Hi!Paris Fellowship applications in machine learning[72]
2021	Associate Editor (declined invite), Journal of Artificial Intelligence and Machine Learning
2021–now	Research Mentor, Kempelen Institute of Intelligent Technologies, Bratislava, Slovakia
2021	**Senior Program Committee Member**, IJCAI, Montréal, Canada
2021	**Area Chair**, ICLR, Vienna, Austria
2020	External PhD Examiner for Axel Böhm, University of Vienna (advisor: Radu Ioan Bot)
2020	External PhD Examiner for Dmitry Grishchenko, Université Grenoble Alpes (advisors: Franck Iutzeler, Jérome Malick, and Massih-Reza Amini)
2020	**Area Chair**, NeurIPS, Vancouver, Canada
2020	**Expert Reviewer**, ICML, Vienna, Austria
2020	Program Committee Member, ICML International Workshop on Federated Learning for User Privacy and Data Confidentiality
2020	Evaluator & Reviewer, European Commission H2020 grants
2020	Evaluator & Reviewer, European Commission ICT grants totaling 40+ million EUR
2020	Program Committee Member, International Workshop on Federated Learning for User Privacy and Data Confidentiality (IJCAI-PRICAI[73]), Yokohama, Japan
2020	**Senior Program Committee Member**, IJCAI-PRICAI, Yokohama, Japan
2019	Program Committee Member, NeurIPS, Vancouver, Canada
2019	Program Committee Member, AISTATS, Naha, Okinawa, Japan
2019	External PhD Examiner for Benjamin Dubois, École des Ponts, France (advisor: G. Obozinski)
2019–now	**Handling Editor**, Journal of Nonsmooth Analysis and Optimization
2019	**Senior Program Committee Member**, IJCAI, Macao, China
2019	**Area Chair**, ICML, Long Beach, California

[70] Habilitation á diriger des recherches

[71] area: Optimization for Machine Learning

[72] Hi!Paris is a new interdisciplinary center for research and education on AI and Data Analytics for Science, Business and Society launched by HEC Paris and Institut polytechnique de Paris (IP Paris). See www.hi-paris.fr

[73] International Joint Conference on Artificial Intelligence – Pacific Rim International Conference on Artificial Intelligence

2018–now	**Associate Editor**, Optimization Methods and Software
2018	Reviewer, Carnegie Trust, UK
2018	Program Committee Member, NeurIPS, Montreal, Canada
2018	Program Committee Member, ICML, Stockholm, Sweden
2018	Program Committee Member, ICLR, Vancouver, Canada
2017	Program Committee Member, NeurIPS, Long Beach, USA
2017	Program Committee Member, AAAI, New Orleans, USA
2017	Reviewer, ERC (European Research Council) Consolidator Grants
2016	Habilitation Examiner for Nicolas Couellan, Institut de Mathématiques de Toulouse, Université Paul Sabatier, France (other examiners: Jean-Baptiste Hiriart-Urruty (Toulouse))
2016	External PhD Examiner for Igor Colin, Télécom ParisTech, France (other examiners: Alexandre D'Aspremont (ENS) and Mikael Johansson (KTH))
2016	**Guest Editor**, Journal of Computational Mathematics (co-editors: Xiaojun Chen, Yuhong Dai, and Yinyu Ye)
2016	Reviewer, EPSRC Programme Grant Scheme
2016	External PhD Examiner for Hamid Reza Feyzmahdavian, Automatic Control Department, KTH Royal Institute of Technology, Sweden
2016	Program Committee Member, Symposium on Distributed Information Processing, Optimization, and Resource Management over Networks, IEEE Global Conference on Signal and Information Processing, Greater Washington, D.C., USA
2016	Program Committee Member, NeurIPS, Barcelona, Spain
2016	Program Committee Member, ICML, New York, USA
2016	Program Committee Member, International Conference on Internet of Things and Big Data, Rome, Italy
2015	Program Committee Member, AISTATS, San Diego, California
2015	Program Committee Member, 13th EUROPT Workshop on Advances in Continuous Optimization, Edinburgh
2015	Program Committee Member, ICML, Lille, France
2015	External DPhil Examiner for Sheng Fang, Mathematical Institute, University of Oxford, UK (internal examiner: Jared Tanner)
2015	Lead, Alan Turing Institute PhD Programme in Data Science (responsible, on behalf of the University of Edinburgh, for the development of the PhD programme, starting in 2017)
2015	Evaluator & Reviewer, EU Horizon 2020 grants totaling 36.2 million EUR
2015	Reviewer for Leverhulme Trust (2×)
2015	Reviewer for Isaac Newton Trust
2014–2020	**Associate Editor**, Optimization (Frontiers in Applied Mathematics and Statistics)
2014–2017	Steering Committee (representing School of Mathematics), Centre for Doctoral Training in Data Science, University of Edinburgh (£5.03m grant from EPSRC)
2013–2017	Member, EPSRC Peer Review College
2013	Evaluator & Reviewer, EU FP7 grants totaling 42.5 million EUR.
2013	Chief Editor (declined invite), Statistics, Optimization and Computing (SOIC)
2012–2014	Steering Committee (representing University of Edinburgh), Numerical Algorithms and Intelligent Software (£5m grant from EPSRC)
2011–2017	Reviewer, EPSRC
2011–2016	Faculty Advisor, SIAM Edinburgh Student Chapter

12.2 JOURNAL REVIEWING

Mathematical Programming, SIAM Journal on Optimization, SIAM Review, Foundations of Computational Mathematics, Journal of Machine Learning Research, Machine Learning, IEEE Signal Processing, Symposium on Theory of Computing, Computational Optimization and Applications, Optimization Methods and Software, SIAM Journal on Computing, European Journal of Operational Research, Central European Journal of Operational Research, Journal of Global Optimization.

12.4 SERVICE @ KAUST

2024	PhD Proposal Examiner for Eslam Abdelrahman, Computer Science
2022–2025	**Member, SDAIA-KAUST Center of Excellence in Data Science and AI**
2022–2024	**Founding Member, KAUST AI Initiative**
2022–2024	**Member, AI Initiative Faculty Search Committee**
2022	PhD Proposal Examiner for Fatimah Zohra, Computer Science
2022	MS Thesis Examiner for Fernando Zhapa Camacho, Computer Science
2021–2022	**Member, AI Initiative Advisory Board**
2021	PhD Proposal Examiner for Han Shao, Computer Science
2020–2021	**Chair, Machine Learning Faculty Search Committee**
2020	PhD Thesis Examiner for Adel Bibi, Computer Science (other examiners: Yi Ma (Berkeley), Wolfgang Heidrich (KAUST), Bernard Ghanem (KAUST))
2019–2021	**Member, AI Initiative Committee**
2019–2021	Faculty Sponsor, KAUST ACM Student Chapter
2019–2020	**Chair, Machine Learning Faculty Search Committee**
2019	PhD Proposal Examiner for Adel Bibi, Computer Science
2019	Member, Research Strategic Plan Working Group (representing CEMSE)
2018–2019	**Chair, Artificial Intelligence Committee**[74]
2018–now	**Co-Founder, The Machine Learning Hub** (with M. Canini, B. Ghanem and P. Kalnis)
2018–2019	CS Program Curriculum Committee Member
2018	CS Faculty Search Committee Member, Machine Learning
2017	PhD Proposal Examiner for Khalil Elkhalil, Electrical Engineering
2017–2019	Elected Member of the Academic Council
2017–2018	Faculty Search Committee, Statistics and Computer Science
2017	Directed Research Project Evaluation Panel

12.5 SERVICE @ EDINBURGH

2016	Recruitment Panel, Chancellor's Fellowships in "Mathematics of Data Science" and "Industrial Mathematics"
2016	Internal PhD Examiner for Zhanxing Zhu, School of Informatics, University of Edinburgh (external examiner: Manfred Opper (TU Berlin)
2015	PhD Admissions, Data Science
2015	Recruitment Panel, Lectureship in "Mathematics of Data Science"
2014–2015	Part of a small team at Edinburgh assisting with a bid for **The Alan Turing Institute (UK National Data Science and AI Institute)** and subsequently with organizational planning. The bid was successful and University of Edinburgh became one of 5 founding institutions of the Alan Turing Institute (with Oxford, Cambridge, UCL and Warwick).
2013–2016	PhD Admissions, OR & Optimization
2009–2015	Director of Studies and Personal Tutor

[74] I led a university-wide committee tasked by the President of KAUST to prepare a document mapping current AI activity at KAUST and suggesting a plan for building the AI initiative at KAUST in the next 5 years; we have written a 100+ page report.

2009–2015 MSc Projects Coordinator, OR and Optimization Programme

13. PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (ACM)
Society for Industrial and Applied Mathematics (SIAM)
Mathematical Optimization Society (MOS)
Edinburgh Mathematical Society (EMS)
Isaac Newton Institute for Mathematical Sciences (INIMS)
Institute for Operations Research and Management Science (INFORMS)
Foundations of Computational Mathematics (FoCM)
Slovak Mathematical Society (SMS)

14. INDUSTRY INVOLVEMENT

14.1 INDUSTRY INVOLVEMENT: SUMMARY

company	paper(s)	comment
Sony AI	[240]	
Shanghai AI Lab	[214]	+ ongoing collaboration
JD Explore Academy	[196]	
Intel	[95]	
Microsoft Research	[79, 95, 193]	+ ongoing collaboration
IBM Research	[22, 78, 158]	+ ongoing collaboration
Samsung AI		ongoing collaboration
Facebook	[83, 187]	+ ongoing collaboration
Amazon	[49, 151]	
Google	[51, 52, 168]	co-development of Federated Learning
Barefoot Networks	[95]	
Baidu	[29]	
Western General Hospital	[11]	

In the past I have had research discussions with SAS, Twitter, Arup, British Geological Survey, Confbuzz and Scottish Financial Risk Academy.

14.2 INDUSTRY INVOLVEMENT: FEDERATED LEARNING (with Google)

Standard machine learning approaches require centralizing the training data on one machine or in a data-center. For models trained from user interaction with mobile devices, a new approach was just released by Google, a result of collaboration between Google, Jakub Konečný and myself. The new approach is called "Federated Learning"; it is described in my papers [51, 52] and two additional papers by Google.
Federated Learning enables mobile phones to collaboratively learn a shared prediction model while keeping all the training data on device, decoupling the ability to do machine learning from the need to store the data in the cloud. This goes beyond the use of local models that make predictions on mobile devices by bringing model training to the device as well. **The technology is now in use by around 1 billion Android devices.**

The CEO of Google, Sundar Pichai, said:

> "... we continue to set the pace in machine learning and AI research. We introduced a new technique for training deep neural networks on mobile devices called Federated Learning. This technique enables people to run a shared machine learning model, while keeping the underlying data stored locally on mobile phones."

The new technology is described in a Google Research Blog, dated April 2017, to a lay audience. Selected media coverage: Forbes, The Verge, Quartz, TechRepublic, ZDNet, Computer Business Review, Motherboard Vice, Infoworld, Venturebeat, Engadget, Tech Narratives, GadgetHacks, BGR, AndroidAuthority, AndroidHeadlines, Tom's Guide, Digital Trends, The Exponential View, 9to5google.

14.3. INDUSTRY INVOLVEMENT: YOUTUBE (with Google)

An excerpt from a support letter written to me by David J Harper, the Head of EMEA University Relations, Google Switzerland, for the purpose of a (successful) grant application:

> "Google recognizes the contributions of Dr Richtárik's research to the field of big data optimization. We have invited him to deliver a talk on his research on parallel and distributed coordinate descent methods in our internal Machine Learning seminar. The talk took place in Mountain View, California, in September 2013 and was televised via our teleconference facilities to Google offices around the globe. A variant of the algorithm[75] developed by Dr. Richtárik is in operation at Google in the YouTube recommendation engine."

15. PUBLICATIONS

15.1 CITATION METRICS[76]

According to Google Scholar, my works attracted more than 27,000 citations, and my `h-index` is 70.

15.2 CONFERENCE/JOURNAL ABBREVIATIONS

NeurIPS	Annual Conference on Neural Information Processing Systems (a leading conference in machine learning and artificial intelligence research)
ICML	International Conference on Machine Learning (a leading conference in machine learning and artificial intelligence research)
ICLR	International Conference on Learning Representations (a leading conference in machine learning and artificial intelligence research)
AISTATS	International Conference on Artificial Intelligence and Statistics
ALT	International Conference on Algorithmic Learning Theory
AAAI	Conference on Artificial Intelligence
UAI	Uncertainty in Artificial Intelligence
NAACL	Annual Conference of the Nations of the Americas Chapter of the ACL
MSML	Mathematical and Scientific Machine Learning
JMLR	Journal of Machine Learning Research
TMLR	Transactions on Machine Learning Research
ECML PKDD	European Conf. on Machine Learning and Principles & Practice of Knowledge Discovery in Databases
DistributedML	International Workshop on Distributed Machine Learning
ICCV	IEEE International Conference on Computer Vision
VMV	Vision, Modeling and Visualization
MLSP	IEEE International Workshop on Machine Learning for Signal Processing
PROMS	Springer Proceedings in Mathematics & Statistics

[75] A variant of the method developed in [18, 24].

[76] These citations metric were extracted via Google Scholar in February 2025.

ICASSP	International Conference on Acoustics, Speech, and Signal Processing (world's largest and most comprehensive technical conference focused on signal processing and its applications)
GlobalSIP	IEEE Global Conference on Signal and Information Processing
Allerton	Annual Allerton Conference on Communication, Control, and Computing
SPARS	Proceedings of Signal Processing with Adaptive Sparse Structured Representations
WACV	IEEE Winter Conference on Applications in Computer Vision
SPIE	Proceedings of the Society of Photo-Optical Instrumentation Engineers
OR	Operations Research Proceedings
SIGCOMM	ACM's Special Interest Group on Data Communications, specializing in the field of communication and computer networks
SOSP	Workshop on AI Systems at Symposium on Operating Systems Principles
NSDI	USENIX Symposium on Networked Systems Design and Implementation

15.3 LIST OF PUBLICATIONS, PREPRINTS & TECHNICAL REPORTS

The papers are listed in reverse chronological order in terms of their appearance online. The `arXiv` identifier is mentioned for papers which are not yet published. Coauthors marked with (r), (p), (d), (m) and (i) were my (r)esearch scientists, (p)ostdocs, (d)octoral students, (m)aster students and (i)nterns at the time of writing, respectively.

(278) E. Shulgin[(d)], S. Khirirat[(p)], P. Richtárik
Smoothed normalization for efficient distributed private optimization
`arXiv:2502.13482`

(277) A. Riabinin[(d)], A. Khaled, P. Richtárik
A novel unified parametric assumption for nonconvex optimization
`arXiv:2502.12329`

(276) R. Islamov, S. Horváth, A. Lucchi, P. Richtárik, E. Gorbunov
Double momentum and error feedback for clipping with fast rates and differential privacy
`arXiv:2502.11682`

(275) Z. Tovmasyan[(i)], G. Malinovsky[(d)], L. Condat[(r)], P. Richtárik
Revisiting stochastic proximal point methods: generalized smoothness and similarity
`arXiv:2502.03401`

(274) K. Gruntkowska[(d)], H. Li[(d)], A. Rane[(i)], P. Richtárik
The ball-proximal (="broximal") point method: a new algorithm, convergence theory, and applications
`arXiv:2502.02002`

(273) K. Yi[(d)], P. Richtárik
Symmetric pruning of large language models
`arXiv:2501.18980`

(272) A. Maranjyan[(d)], A. Tyurin, P. Richtárik
Ringmaster ASGD: The first asynchronous SGD with optimal time complexity
`arXiv:2501.16168`

Prepared in 2024

(271) E. Shulgin[d], P. Richtárik
On the convergence of DP-SGD with adaptive clipping
arXiv:2412.19916

(270) I. Sokolov[d], P. Richtárik
MARINA-P: Superior performance in non-smooth federated optimization with adaptive stepsizes
arXiv:2412.17082

(269) A. Maranjyan[d], A. Sadiev[d], P. Richtárik
Differentially private random block coordinate descent
arXiv:2412.17054

(268) E. Gasanov[d], P. Richtárik
Speeding up stochastic proximal optimization in the high Hessian dissimilarity setting
arXiv:2412.13619

(267) Y. Demidovich[p], P. Ostroukhov, G. Malinovsky[d], S. Horváth, M. Takáč, P. Richtárik, E. Gorbunov
Methods with local steps and random reshuffling for generally smooth non-convex federated optimization
ICLR 2025

(266) V. Malinovskii, A. Panferov, I. Ilin[m], H. Guo, P. Richtárik, D. Alistarh
Pushing the limits of large language model quantization via the linearity theorem
NAACL 2025

(265) S. Khirirat[p], A. Sadiev[d], A. Riabinin[d], E. Gorbunov, P. Richtárik
Error feedback under (L_0, L_1)-smoothness: normalization and momentum
arXiv:2410.16871

(264) W. Anyszka[i], K. Gruntkowskaa[d], A. Tyurin[p], P. Richtárik
Tighter performance theory of FedExProx
arXiv:2410.15368

(263) K. Burlachenko[d], P. Richtárik
Unlocking FedNL: Self-contained compute-optimized implementation
arXiv:2410.08760

(262) Grigory Malinovsky[d], Umberto Michieli, Hasan Abed Al Kader Hammoud, Taha Ceritli, Hayder Elesedy, Mete Ozay, P. Richtárik
Randomized asymmetric chain of LoRA: The first meaningful theoretical framework for low-rank adaptation
arXiv:2410.08305

(261) A. Maranjyan[d], O. S. Omar[m], P. Richtárik
MindFlayer: Efficient asynchronous parallel SGD in the presence of heterogeneous and random worker compute times
arXiv:2410.04285

(260) H. Li[(d)], P. Richtárik
On the convergence of FedProx with extrapolation and inexact prox
arXiv:2410.01410

(259) E. Gorbunov, N. Tupitsa, S. Choudhury, A. Aliev, P. Richtárik, S. Horváth, M. Takáč
Methods for convex (L_0, L_1)-smooth optimization: clipping, acceleration, and adaptivity
ICLR 2025

(258) K. Yi[(d)], T. Kharisov[(i)], I. Sokolov[(d)], P. Richtárik
Cohort squeeze: Beyond a single communication round per cohort in cross-device federated learning
NeurIPS 2024 FL Workshop
Oral at the NeurIPS 2024 FL Workshop

(257) G. Meinhardt[(i)], K. Yi[(d)], L. Condat[(r)], P. Richtárik
Prune at the clients, not the server: Accelerated sparse training in federated learning
arXiv:2405.20623

(256) A. Karagulyan[(p)], E. Shulgin[(d)], A. Sadiev[(d)], P. Richtárik
SPAM: Stochastic proximal point method with momentum variance reduction for nonconvex cross-device federated learning
arXiv:2405.20127

(255) L. Condat[(r)], P. Richtárik
A simple linear convergence analysis of the Point-SAGA algorithm
arXiv:2405.19951

(254) P. Richtárik, S. M. Giancola[(i)], D. Lubczyk[(i)], R. Yadav[(i)]
Local curvature descent: squeezing more curvature out of standard and Polyak gradient descent
arXiv:2405.16574

(253) A. Tyurin[(p)], P. Richtárik
On the optimal time complexities in decentralized stochastic asynchronous optimization
NeurIPS 2024

(252) P. Richtárik, A. Sadiev[(d)], Y. Demidovich[(p)]
A unified theory of stochastic proximal point methods without smoothness
arXiv:2405.15941

(251) I.-V. Modoranu, M. Safaryan, G. Malinovsky[(d)], E. Kurtic, T. Robert, P. Richtárik, D. Alistarh
MicroAdam: Accurate adaptive optimization with low space overhead and provable convergence
NeurIPS 2024

(250) A. Tyurin[(p)], K. Gruntkowska[(d)], P. Richtárik
Freya PAGE: First optimal time complexity for large-scale nonconvex finite-sum optimization with heterogeneous asynchronous computations
NeurIPS 2024

(249) V. Malinovskii, D. Mazur, I. Ilin[(d)], D. Kuznedelev, K. Burlachenko[(d)], K. Yi[(d)], D. Alistarh, P. Richtárik
PV-Tuning: Beyond straight-through estimation for extreme LLM compression

NeurIPS 2024
Oral at NeurIPS 2024 (0.4% acceptance rate)

(248) A. Sadiev[(d)], L. Condat[(r)], P. Richtárik
Stochastic proximal point methods for monotone inclusions under expected similarity
arXiv:2405.14255

(247) H. Li[(d)], K. Acharya[(i)], P. Richtárik
The power of extrapolation in federated learning
NeurIPS 2024

(246) Kai Yi[(d)], G. Meinhardt[(i)], P. Richtárik
FedComLoc: Communication-efficient distributed training of sparse and quantized models
arXiv:2403.09904

(245) Y. Demidovich[(p)], G. Malinovsky[(d)], P. Richtárik
Streamlining in the Riemannian realm: Efficient Riemannian optimization with loopless variance reduction
arXiv:2403.06677

(244) L. Condat[(r)], A. Maranjyan[(d)], P. Richtárik
LoCoDL: Communication-efficient distributed learning with local training and compression
ICLR 2025
Spotlight at NeurIPS 2024

(243) K. Gruntkowska[(d)], A. Tyurin[(p)], P. Richtárik
Improving the worst-case bidirectional communication complexity for nonconvex distributed optimization under function similarity
NeurIPS 2024
Spotlight at NeurIPS 2024

(242) A. Tyurin[(p)], M. Pozzi[(i)], I. Ilin[(d)], P. Richtárik
Shadowheart SGD: distributed asynchronous SGD with optimal time complexity under arbitrary computation and communication heterogeneity
NeurIPS 2024

(241) A. Panferov[(i)], Y. Demidovich[(p)], A. Rammal[(i)], P. Richtárik
Correlated quantization for faster nonconvex distributed optimization
arXiv:2401.05518

Prepared in 2023

(240) K. Yi[(d)], N. Gazagnadou, P. Richtárik, and L. Lyu
FedP3: Personalized and privacy-friendly federated network pruning under model heterogeneity
ICLR 2024

(239) P. Richtárik, E. Gasanov[(d)], and K. Burlachenko[(d)]
Error feedback reloaded: From quadratic to arithmetic mean of smoothness constants

ICLR 2024

(238) J. Xin, I. Ilin[(d)], S. Zhang, M. Canini, and P. Richtárik
Kimad: Adaptive gradient compression with bandwidth awareness
DistributedML 2023

(237) K. Burlachenko[(d)], A. Alrowithi, F. A. Albalawi, and P. Richtárik
Federated learning is better with non-homomorphic encryption
DistributedML 2023

(236) Y. Demidovich[(p)], G. Malinovsky[(d)], E. Shulgin[(d)], and P. Richtárik
MAST: Model-agnostic sparsified training
ICLR 2025

(235) G. Malinovsky[(d)], P. Richtárik, S. Horváth, and E. Gorbunov
Byzantine robustness and partial participation can be achieved simultaneously: just clip gradient differences
`arXiv:2311.14127`

(234) M. Fornasier, K. Riedl, P. Richtárik, and L. Sun[(d)]
Consensus-based optimization with truncated noise
European Journal of Applied Mathematics, 2024

(233) A. Rammal[(i)], K. Gruntkowska[(i)], N. Fedin, E. Gorbunov, and P. Richtárik
Communication compression for Byzantine robust learning: New efficient algorithms and improved rates
AISTATS 2024

(232) H. Li[(d)], A. Karagulyan[(p)], and P. Richtárik
MARINA meets matrix stepsizes: Variance reduced distributed non-convex optimization
`arXiv:2310.04614`

(231) E. Gorbunov, A. Sadiev[(d)], M. Danilova, S. Horváth, G. Gidel, P. Dvurechensky, A. Gasnikov, and P. Richtárik
High-probability convergence for composite and distributed stochastic minimization and variational inequalities with heavy-tailed noise
ICML 2024
Oral (144/9473 = top 1.5%)

(230) E. Shulgin[(d)]and P. Richtárik
Towards a better theoretical understanding of independent subnetwork training
ICML 2024

(229) R. Szlendak[(m)], E. Gasanov[(d)], and P. Richtárik
Understanding progressive training through the framework of randomized coordinate descent
AISTATS 2024

(228) M. Grudzień, G. Malinovsky[(d)], and P. Richtárik
Improving accelerated federated learning with compression and importance sampling
`arXiv:2306.03240`

(227) S. Khirirat[(p)], E. Gorbunov, S. Horváth, R. Islamov, F. Karray, and P. Richtárik
Clip21: Error feedback for gradient clipping
arXiv:2305.18929

(226) J. Xin, M. Canini, P. Richtárik, and S. Horváth
Global QSGD: Practical floatless quantization for distributed learning with theoretical guarantees
arXiv:2305.18627

(225) Y. Demidovich[(p)], G. Malinovsky[(d)], I. Sokolov[(d)]and P. Richtárik
A guide through the zoo of biased SGD
NeurIPS 2023

(224) P. Richtárik, E. Gasanov[(d)]and K. Burlachenko[(d)]
Error feedback shines when features are rare
arXiv:2305.15264

(223) I. Fatkhullin, A. Tyurin[(p)], and P. Richtárik
Momentum provably improves error feedback!
NeurIPS 2023

(222) K. Yi[(d)], L. Condat[(r)], and P. Richtárik
Explicit personalization and local training: double communication acceleration in federated learning
arXiv:2305.13170

(221) A. Tyurin[(p)]and P. Richtárik
Optimal time complexities of parallel stochastic optimization methods under a fixed computation model
NeurIPS 2023

(220) A. Tyurin[(p)]and P. Richtárik
2Direction: Theoretically faster distributed training with bidirectional communication compression
NeurIPS 2023

(219) H. Li[(d)], A. Karagulyan[(p)]and P. Richtárik
Det-CGD: Compressed gradient descent with matrix stepsizes for non-convex optimization
ICLR 2024

(218) A. Karagulyan[(p)]and P. Richtárik
ELF: Federated Langevin algorithms with primal, dual and bidirectional compression
arXiv:2303.04622

(217) L. Condat[(r)], G. Malinovsky[(d)], and P. Richtárik
TAMUNA: Accelerated federated learning with local training and partial participation
arXiv:2302.09832

(216) G. Malinovsky[(d)], S. Horváth, K. Burlachenko[(d)]and P. Richtárik
Federated learning with regularized client participation
arXiv:2302.03662

(215) A. Sadiev[(d)], M. Danilova, E. Gorbunov, S. Horváth, G. Gidel, P. Dvurechensky, A. Gasnikov and P. Richtárik
High-probability bounds for stochastic optimization and variational inequalities: the case of unbounded variance
ICML 2023

(214) X. Qian[(p)], H. Dong, T. Zhang and P. Richtárik
Catalyst acceleration of error compensated methods leads to better communication complexity
AISTATS 2023

(213) S. Hanzely[(d)], K. Mishchenko[(d)]and P. Richtárik
Convergence of first-order algorithms for meta-learning with Moreau envelopes
`arXiv:2301.06806`

Prepared in 2022

(212) M. Grudzień[(i)], G. Malinovsky[(d)]and P. Richtárik
Can 5th generation local training methods support client sampling? Yes!
AISTATS 2023

(211) M. Makarenko, E. Gasanov[(d)], R. Islamov[(i)], A. Sadiev[(d)]and P. Richtárik
Adaptive compression for communication-efficient distributed training
TMLR 2023

(210) S. Hanzely[(d)], D. Kamzolov, D. Pasechnyuk, A. Gasnikov, P. Richtárik and M. Takáč
A damped Newton method achieves global $O(1/k^2)$ and local quadratic convergence rate
NeurIPS 2022

(209) A. Maranjyan[(i)], M. Safaryan[(p)]and P. Richtárik
GradSkip: Communication-accelerated local gradient methods with better computational complexity
`arXiv:2210.16402`

(208) L. Condat[(r)], I. Agarský[(d)]and P. Richtárik
Provably doubly accelerated federated learning: the first theoretically successful combination of local training and compressed communication
`arXiv:2210.13277`

(207) L. Sun[(d)]and P. Richtárik
Improved Stein variational gradient descent with importance weights
`arXiv:2210.00462`

(206) K. Gruntkowska[(i)], A. Tyurin[(p)]and P. Richtárik
EF21-P and friends: Improved theoretical communication complexity for distributed optimization with bidirectional compression
ICML 2023

(205) S. Boucherouite, G. Malinovsky[(d)], P. Richtárik and E. H. Bergou
Minibatch stochastic three points method for unconstrained smooth minimization
AAAI 2024

(204) E. H. Bergou[r], K. Burlachenko[d], A. Dutta and P. Richtárik
Personalized federated learning with communication compression
TMLR 2023

(203) S. Horváth[d], K. Mishchenko[d]and P. Richtárik
Adaptive learning rates for faster stochastic gradient methods
arXiv:2208.05287

(202) L. Condat[r]and P. Richtárik
RandProx: Primal-dual optimization algorithms with randomized proximal updates
ICLR 2023
OPT2022: 14th Annual Workshop on Opt. for Machine Learning (NeurIPS 2022 Workshop)

(201) G. Malinovsky[d], K. Yi[d]and P. Richtárik
Variance reduced ProxSkip: Algorithm, theory and application to federated learning
NeurIPS 2022

(200) A. Sadiev[i], D. Kovalev[d]and P. Richtárik
Communication acceleration of local gradient methods via an accelerated primal-dual algorithm with inexact prox
NeurIPS 2022

(199) E. Shulgin[d]and P. Richtárik
Shifted compression framework: generalizations and improvements
UAI 2022

(198) L. Sun[d]and P. Richtárik
A note on the convergence of mirrored Stein variational gradient descent under (L_0, L_1) smoothness condition
arXiv:2206.09709

(197) A. Sadiev[i], G. Malinovsky[d], E. Gorbunov, I. Sokolov[d], A. Khaled, K. Burlachenko[d]and P. Richtárik
Don't compress gradients in random reshuffling: compress gradient differences
NeurIPS 2024

(196) R. Islamov[i], X. Qian[p], S. Hanzely[d], M. Safaryan[p]and P. Richtárik
Distributed Newton-type methods with communication compression and Bernoulli aggregation
TMLR 2023
NeurIPS Workshop 2022 (Order up! The Benefits of Higher-Order Optimization in Machine Learning)

(195) M. Alfarra, J. C. Pérez, E. Shulgin[d], P. Richtárik and B. Ghanem
Certified robustness in federated learning
NeurIPS Workshop 2022 (Federated Learning)

(194) A. Tyurin[p], L. Sun[d], K. Burlachenko[d]and P. Richtárik
Sharper rates and flexible framework for nonconvex SGD with client and data sampling
TMLR 2023

(193) L. Sun[d], A. Salim and P. Richtárik
Federated sampling with Langevin algorithm under isoperimetry

TMLR 2024

(192) E. Gorbunov, S. Horváth[(d)], P. Richtárik and G. Gidel
Variance reduction is an antidote to Byzantines: better rates, weaker assumptions and communication compression as a cherry on the top
ICLR 2023

(191) L. Sun[(d)], A. Karagulyan[(p)]and P. Richtárik
Convergence of Stein variational gradient descent under a weaker smoothness condition
AISTATS 2023

(190) A. Tyurin[(p)]and P. Richtárik
A computation and communication efficient method for distributed nonconvex problems in the partial participation setting
NeurIPS 2023

(189) L. Condat[(r)], K. Yi[(d)]and P. Richtárik
EF-BV: A unified theory of error feedback and variance reduction mechanisms for biased and unbiased compression in distributed optimization
NeurIPS 2022

(188) G. Malinovsky[(d)]and P. Richtárik
Federated random reshuffling with compression and variance reduction
`arXiv:2205.03914`

(187) S. Horváth[(d)], M. Sanjabi, L. Xiao, P. Richtárik and M. Rabbat
FedShuffle: Recipes for better use of local work in federated learning
TMLR 2022

(186) K. Mishchenko[(d)], G. Malinovsky[(d)], S. Stich and P. Richtárik
ProxSkip: Yes! Local gradient steps provably lead to communication acceleration! Finally!
ICML 2022

(185) D. Kovalev[(d)], A. Beznosikov, A. Sadiev, M. Persiianov, P. Richtárik and A. Gasnikov
Optimal algorithms for decentralized stochastic variational inequalities
NeurIPS 2022

(184) A. Tyurin[(p)]and P. Richtárik
DASHA: Distributed nonconvex optimization with communication compression and optimal oracle complexity
ICLR 2023

(183) P. Richtárik, I. Sokolov[(m)], I. Fatkhullin[(i)], E. Gasanov[(d)], Z. Li[(r)]and E. Gorbunov
3PC: Three point compressors for communication-efficient distributed training and a better theory for lazy aggregation
ICML 2022

(182) H. Zhao, B. Li, Z. Li[(r)], P. Richtárik and Y. Chi
BEER: Fast $O(1/T)$ rate for decentralized nonconvex optimization with communication compression
NeurIPS 2022

(181) G. Malinovsky[d], K. Mishchenko[d] and P. Richtárik
Server-side stepsizes and sampling without replacement provably help in federated optimization
DistributedML 2023

Prepared in 2021

(180) D. Kovalev[d], A. Gasnikov and P. Richtárik
Accelerated primal-dual gradient method for smooth and convex-concave saddle-point problems with bilinear coupling
NeurIPS 2022

(179) H. Zhao, K. Burlachenko[d], Z. Li[r] and Peter Richtárik
Faster rates for compressed federated learning with client-variance reduction
To appear in: *SIAM Journal on Mathematics of Data Science, 2023*
`arXiv:2112.13097`

(178) K. Burlachenko[d], S. Horváth[d] and P. Richtárik
FL-PyTorch: Optimization research simulator for federated learning
DistributedML 2021

(177) E. Gasanov[d], A. Khaled, S. Horváth and P. Richtárik
FLIX: A simple and communication-efficient alternative to local methods in federated learning
AISTATS 2022

(176) X. Qian[p], R. Islamov[i], M. Safaryan[p] and P. Richtárik
Basis matters: better communication-efficient second order methods for federated learning
AISTATS 2022

(175) A. Beznosikov, P. Richtárik, M. Diskin, M. Ryabinin and A. Gasnikov
Distributed methods with compressed communication for solving variational inequalities, with theoretical guarantees
NeurIPS 2022

(174) Rafał Szlendak[d], A. Tyurin[p] and P. Richtárik
Permutation compressors for provably faster distributed nonconvex optimization
ICLR 2022

(173) I. Fatkhullin[i], I. Sokolov[d], E. Gorbunov[d], Z. Li[p] and P. Richtárik
EF21 with bells & whistles: practical algorithmic extensions of modern error feedback
`arXiv:2110.03294`

(172) X. Qian[p], H. Dong, P. Richtárik and T. Zhang
Error compensated loopless SVRG, Quartz, and SDCA for distributed optimization
`arXiv:2109.10049`

(171) M. Jahani, S. Rusakov, Z. Shi, P. Richtárik, M. W. Mahoney and M. Takáč
Doubly adaptive scaled algorithm for machine learning using second-order information
ICLR 2022

(170) H. Zhao, Z. Li[(r)] and P. Richtárik
FedPAGE: A fast local method for federated learning
arXiv:2108.04755

(169) Z. Li[(r)] and P. Richtárik
CANITA: Faster rates for distributed convex optimization with communication compression
NeurIPS 2021

(168) 50+ authors
A field guide to federated optimization
arXiv:2107.06917

(167) P. Richtárik, I. Sokolov[(m)], and I. Fatkhullin[(i)]
EF21: A new, simpler, theoretically better, and practically faster error feedback
NeurIPS 2021
NeurIPS 2021 oral paper (less than 1% acceptance rate)

(166) D. Kovalev[(d)], E. Gasanov[(d)], P. Richtárik, and A. Gasnikov
Lower bounds and optimal algorithms for smooth and strongly convex decentralized optimization over time-varying networks
NeurIPS 2021

(165) B. Wang[(i)], M. Safaryan[(p)], and P. Richtárik
Theoretically better and numerically faster distributed optimization with smoothness-aware quantization techniques
NeurIPS 2022

(164) A. Salim[(p)], L. Sun[(d)], and P. Richtárik
A convergence theory for SVGD in the population limit under Talagrand's inequality T1
ICML 2022

(163) L. Condat[(r)] and P. Richtárik
MURANA: A generic framework for stochastic variance-reduced optimization
MSML 2022

(162) M. Safaryan[(p)], R. Islamov[(i)], X. Qian[(p)], and P. Richtárik
FedNL: Making Newton-type methods applicable to federated learning
ICML 2022

(161) G. Malinovsky[(m)], A. Sailanbayev[(d)], and P. Richtárik
Random reshuffling with variance reduction: new analysis and better rates
arXiv:2104.09342

(160) Z. Li[(r)] and P. Richtárik
ZeroSARAH: Efficient nonconvex finite-sum optimization with zero full gradient computations
arXiv:2103.01447

(159) A. Salim[(p)], L. Condat[(r)], D. Kovalev[(d)], and P. Richtárik
An optimal algorithm for strongly convex minimization under affine constraints

AISTATS 2022

(158) Z. Shi, N. Loizou, P. Richtárik, and M. Takáč
AI-SARAH: Adaptive and implicit stochastic recursive gradient methods
TMLR 2023

(157) D. Kovalev[(d)], E. Shulgin[(m)], P. Richtárik, A. Rogozin[(i)], and A. Gasnikov
ADOM: Accelerated decentralized optimization method for time-varying networks
ICML 2021

(156) K. Mishchenko[(d)], B. Wang[(i)], D. Kovalev[(d)], and P. Richtárik
IntSGD: Floatless compression of stochastic gradients
ICLR 2022
ICLR 2022 Spotlight paper

(155) M. Gorbunov[(i)], K. Burlachenko[(d)], Z. Li[(r)], and P. Richtárik
MARINA: faster non-convex distributed learning with compression
ICML 2021

(154) M. Safaryan[(p)], F. Hanzely[(d)], and P. Richtárik
Smoothness matrices beat smoothness constants: better communication compression techniques for distributed optimization
NeurIPS 2021

(153) K. Islamov[(i)], X. Qian[(p)], and P. Richtárik
Distributed second order methods with fast rates and compressed communication
ICML 2021

(152) K. Mishchenko[(d)], A. Khaled[(i)], and P. Richtárik
Proximal and federated random reshuffling
ICML 2022

Prepared in 2020

(151) S. Horváth[(d)], A. Klein, P. Richtárik, and C. Archambeau
Hyperparameter transfer learning with adaptive complexity
AISTATS 2021

(150) X. Qian[(p)], H. Dong, P. Richtárik, and T. Zhang
Error compensated loopless SVRG for distributed optimization
OPT2020: 12th Annual Workshop on Optimization for Machine Learning (NeurIPS 2020 Workshop)

(149) X. Qian[(p)], H. Dong, P. Richtárik, and T. Zhang
Error compensated proximal SGD and RDA
OPT2020: 12th Annual Workshop on Optimization for Machine Learning (NeurIPS 2020 Workshop)

(148) E. Gorbunov[(i)], F. Hanzely[(d)], and P. Richtárik
Local SGD: unified theory and new efficient methods
AISTATS 2021

(147) D. Kovalev[(d)], A. Koloskova, M. Jaggi, P. Richtárik, and S. U. Stich
A linearly convergent algorithm for decentralized optimization: sending less bits for

free!
AISTATS 2021

(146) W. Chen[(i)], S. Horváth[(d)], and P. Richtárik
Optimal client sampling for federated learning
TMLR 2022
Privacy Preserving Machine Learning (NeurIPS 2020 Workshop)

(145) E. Gorbunov[(i)], D. Kovalev[(d)], D. Makarenko, and P. Richtárik
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