ELNUR GASANOV

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PUBLICATIONS

Error Feedback Shines when Features are Rare
Peter Richtárik, Elnur Gasanov, Konstantin Burlachenko
https://arxiv.org/abs/2305.15264

Understanding Progressive Training Through the Framework of Randomized Coordinate Descent
Rafał Szlendak, Elnur Gasanov, Peter Richtárik
https://arxiv.org/abs/2306.03626

Adaptive Compression for Communication-Efficient Distributed Training
Maksim Makarenko, Elnur Gasanov, Abdurakhmon Sadiev, Rustem Islamov, Peter Richtárik

- Transactions on Machine Learning Research (accepted)
- https://arxiv.org/abs/2211.00188

3PC: Three Point Compressors for Communication-Efficient Distributed Training and a Better Theory for Lazy Aggregation
Peter Richtárik, Igor Sokolov, Ilyas Fatkhullin, Elnur Gasanov, Zhize Li, Eduard Gorbunov

- Proceedings of the 39th International Conference on Machine Learning (ICML 2022)
- https://arxiv.org/abs/2202.00998

FLIX: A Simple and Communication-Efficient Alternative to Local Methods in Federated Learning
Elnur Gasanov, Ahmed Khaled, Samuel Horvath, Peter Richtárik

- Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS 2022)
- https://arxiv.org/abs/2111.11556

Lower Bounds and Optimal Algorithms for Smooth and Strongly Convex Decentralized Optimization Over Time-Varying Networks
Dmitry Kovalev, Elnur Gasanov, Alexander Gasnikov, Peter Richtárik

- Proceedings of the 35th Conference on Neural Information Processing Systems (NeurIPS 2021)
- https://arxiv.org/abs/2106.04469

From Local SGD to Local Fixed-Point Methods for Federated Learning
Grigory Malinovsky, Dmitry Kovalev, Elnur Gasanov, Laurent Condat, Peter Richtárik

- Proceedings of the 37th International Conference on Machine Learning (ICML 2020)
- https://arxiv.org/abs/2004.01442

Stochastic Spectral and Conjugate Descent Methods
Dmitry Kovalev, Eduard Gorbunov, Elnur Gasanov, Peter Richtárik

- Proceedings of the 32th Conference on Neural Information Processing Systems (NeurIPS 2018)
- https://arxiv.org/abs/1802.03703

Creation of approximating scalogram description in a problem of movement prediction
Elnur Gasanov, Anastasia Motrenko

- "Machine Learning and Data Analysis", Vol. 3, #2, 2017
- http://jmlda.org/papers/doc/2017/no2/Gasanov2017ECoGAnalysis.pdf (in russian)

EDUCATION

Ph.D. in Machine Learning and Optimization Jan. 2020 - Present
King Abdullah University of Science and Technology
Research focus: Compression and Personalization for Federated Learning
Supervisor: Peter Richtárik

Master of Science in Computer Science Sep. 2018 - Dec. 2019
King Abdullah University of Science and Technology
GPA: 3.67/4.00

Bachelor of Science in Applied Mathematics and Physics Sep. 2014 - Jun. 2018
Moscow Institute of Physics and Technology (State University)
Average Grade: 8.66/10.00

HONORS AND AWARDS

2023	**Invitation to give a talk at MegaData**	Estonia
2022	**CEMSE Dean's List Award (Top 20%)**	Saudi Arabia
2022	**Progress towards Ph.D. rated as "Outstanding"**	Saudi Arabia
2022	**Best Reviewer Award (Top 10%) at ICML 2022**	USA
2019	**DS3 Summer School Acceptance**	France
2018	**KAUST Fellowship for MS/PhD students**	Saudi Arabia
2017	**Enlarged state academic scholarship**	Russia
2014-2017	**Abramov fund excellence scholarship**	Russia
2014	**Prize-winner of competition "Future Scientists"**	Russia
2013	**Prize-winner of All-Russia Economics Olympiad, Regional step**	Russia
2012-2014	**Governor's award**	Russia
2012-2014	**Prize-winner of All-Russia Physics Olympiad, Regional step**	Russia
2012, 2014	**Prize-winner of All-Russia Math Olympiad, Regional step**	Russia

PROFESSIONAL EXPERIENCE

Graduate Researcher 01/2020 - Present
King Abdullah University of Science and Technology, Artificial Intelligence Initiative
Conducted extensive research in the field of Distributed Learning, collaborating with a team of 15+ researchers. Published five papers in peer-reviewed conferences and journals. Proficiently utilized advanced Python packages (JAX, FedJAX, Optax) for computational experiments. Recognized with the Dean's List Award for outstanding research contributions.

Research Science Intern 06/2019 - 07/2019
University of Grenoble-Alpes, Laboratory Jean Kuntzmann
Developed asynchronous lock-free algorithms for gradient descent, deriving convergence rates for both full and stochastic gradient cases. Analyzed the algorithm with constant and diminishing stepsizes.

SKILLS

Mathematics	Linear Algebra, Theory of Algorithms, Machine Learning, Deep Learning
Programming	Python (PyTorch, JAX), C++
Tools	MS Office, LaTeX, SQL Server
Languages	English (Advanced), Russian (Native Speaker), Azeri (Mother Tongue)

EXTRA CURRICULARS AND HOBBIES

Hobbies: Fitness, Volleyball
Volunteer: National Park Hunsrueck II, Deuselbach, Germany, 2017
Volunteer: Environment and Legality at Vesuvio National Park, Ottaviano, Italy, 2016
Volunteer: University "5top100" conference, 2016
Volunteer: Promoting Biodiversity in Neckertal, Brunnadern SG, Switzerland, 2015