Nikita Doikov

Email: nikita.doikov@uclouvain.be
Homepage: doikov.com
Residence: Belgium, Louvain-la-Neuve
Languages: English, Russian

RESEARCH INTERESTS

Optimization (convex optimization, second-order methods, tensor methods, global complexity bounds, stochastic optimization), Algorithms, Machine Learning

EDUCATION

PhD Student, UCLouvain — 2018 – 2021 (expected)
Thesis: "New second-order and tensor methods in Convex Optimization"
Supervisor: Yurii Nesterov

MSc, Skoltech and Higher School of Economics, GPA – 9.3/10.0 — 2015 – 2017
Thesis: "Regularized Newton method for optimizing strongly convex functions"
Supervisors: Yury Maximov and Yurii Nesterov

BSc, Lomonosov Moscow State University, GPA – 4.9/5.0 — 2011 – 2015
Thesis: "Adaptive regularization of probabilistic topic models"
Supervisor: Konstantin Vorontsov

INDUSTRY EXPERIENCE

Software Engineering Intern at **Google**, Zürich, Geo GA team	2018
Junior Research Scientist at **Samsung-HSE Laboratory**, Moscow	2018
Research Intern at **Skoltech**, Moscow, Center for Energy Systems	2016 – 2017
Software Engineering Intern at **Google**, Zürich, YouTube Content ID team	2016
Junior Software Engineer at **Yandex**, Moscow, Maps Routing team	2015 – 2016
Research Engineer at **Computing Centre of RAS**, Moscow, Topic Modelling	2015

TECHNICAL SKILLS

Advanced: Algorithms and Data Structures, Numerical Optimization Methods, Machine Learning, Data Analysis, Natural Language Processing, Computer Vision

Machine Learning: classification and clustering, learning with latent variables, regularization, graphical models, neural networks, deep learning, structural learning, reinforcement learning, variational inference

Technologies: C++, Python, Matlab, R, SQL, Intel Assembler, UNIX OS architecture, MapReduce, Flume, BigARTM, Vowpal Wabbit, word2vec, BERT, libsvm, liblinear, Theano, Lasagne, DistBelief, TensorFlow, LaTeX, Git, SVN

TEACHING EXPERIENCE

Large-scale Optimization and Applications at Skoltech, seminars	2017
Optimization Methods at Faculty of Computer Science, HSE, seminars	2017, 2018
Bayesian Methods in Machine Learning at HSE, teacher assistant	2017, 2018, 2019

PUBLICATIONS

Optimization Methods for Fully Composite Problems, 2021
N. Doikov and Yu. Nesterov, CORE Discussion Papers; 2021/01, arXiv:2103.12632

Affine-invariant contracting-point methods for Convex Optimization, 2020
N. Doikov and Yu. Nesterov, CORE Discussion Papers; 2020/29, arXiv:2009.08894

Convex optimization based on global lower second-order models, 2020
N. Doikov and Yu. Nesterov, Advances in Neural Information Processing Systems (NeurIPS), arXiv:2006.08598

Stochastic Subspace Cubic Newton Method, 2020
F. Hanzely, N. Doikov, P. Richtárik and Yu. Nesterov, Proceedings of the 37th International Conference on Machine Learning (ICML), arXiv:2002.09526

Inexact Tensor Methods with Dynamic Accuracies, 2020
N. Doikov and Yu. Nesterov, Proceedings of the 37th International Conference on Machine Learning (ICML), arXiv:2002.09403

Contracting Proximal Methods for Smooth Convex Optimization, 2019
N. Doikov and Yu. Nesterov, SIAM Journal on Optimization, arXiv:1912.07972

Local Convergence of Tensor Methods, 2019
N. Doikov and Yu. Nesterov, Mathematical Programming Journal, arXiv:1912.02516

Minimizing Uniformly Convex Functions by Cubic Regularization of Newton Method, 2019
N. Doikov and Yu. Nesterov, Journal of Optimization Theory and Applications, arXiv:1905.02671

Randomized Block Cubic Newton Method, 2018
N. Doikov and P. Richtárik, Proceedings of the 35th International Conference on Machine Learning (ICML), arXiv:1802.04084

REVIEWING

Conferences: ICML 2019, 2020, 2021, NeurIPS 2019, 2020, 2021
Journals: Optimization Methods and Software, Journal of Optimization Theory and Applications, IEEE Transactions on Information Theory

CONFERENCES, SCHOOLS AND RESEARCH VISITS

- Workshop on Advances in Continuous Optimization (EUROPT), online, 2021*
- Symposium on Numerical Analysis and Optimization, UFPR, online, 2021*
- Conference on Neural Information Processing Systems (NeurIPS), online, 2020*
- International Conference on Machine Learning (ICML), online, 2020*
- French-German-Swiss conference on Optimization (FGS), Nice, 2019*
- International Conference on Continuous Optimization (ICCOPT), Berlin, 2019*
- Workshop on Advances in Continuous Optimization (EUROPT), Glasgow, 2019*
- Visit of Optimization and Learning for Data Science group in Grenoble, 2019*
- Summer School on Optimization, Big Data and Applications in Veroli, 2019*
- Traditional School Control, Information and Optimization in Moscow, 2018* – 2019
- International Conference on Machine Learning (ICML), Stockholm, 2018*
- Visit of the group of Peter Richtárik at KAUST, 2017*
- Recent Advances in Algorithms in St. Petersburg, 2017
- Deep Hack Artificial Intelligence competition and lecture series at MIPT, 2016
- Participant of the MIPT fall programming training, 2014
- Winter and Summer Programming Training Camps in Petrozavodsk, 2012 – 2014
- Winter Programming School on Advanced Algorithms in Kharkiv, 2012

*The talk was given.