Personal information

Surname(s) / First name(s)	**Danilova, Marina**
Address(es)	48, Parkovaya Ulitsa, apt. 449, 141702, Dolgoprudny, Moscow Oblast
Telephone(s)	+7 916 468 52 12 (cell)
Email(s)	danilovamarina15@gmail.com(preferred);danilovamarina15@mail.ru
Nationality(-ies)	Russia
Date of birth	April 15, 1994
Website	marinadanya.github.io

Education and training

Date	**September 2012 - July 2016**
Position	BSc degree in Applied Math and Physics
Organization	Moscow Institue of Physics and Technology, 9, Institutskiy per., 141701, Dolgoprudny, Russia
Department	Control and Applied Mathematics
GPA	4.8/5.0
Thesis	Research of the method of iteratively reweighted least squares
Date	**September 2016 - July 2018**
Position	MSc degree in Applied Math and Physics
Organization	Moscow Institue of Physics and Technology, 9, Institutskiy per., 141701, Dolgoprudny, Russia
Department	Control and Applied Mathematics
GPA	5.0/5.0
Thesis	Non-monotone behavior of the Heavy ball method
Date	**September 2016 - July 2018**
Position	MSc degree in Information Technology and Engineering
Organization	Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Building 3, 143026, Moscow, Russia
Department	Energy Systems
GPA	4.6/5.0
Thesis	The non-monotonicity effect and exact estimates of the rate of convergence of some optimization methods
Date	**September 2018 - December 2022**
Position	PhD in Computer science
Organization	Institute for Control Science, RAS, 65, Profsoyuznaya str, 117997, Moscow, Russia
Supervisor	Boris Polyak

Research interests

Convex optimization; first-order methods; large-scale and huge-scale optimization; stochastic and online optimization; combinatorial optimization

Teaching Experience

2016 - 2021: Moscow Institue of Physics and Technology, Department of Control and Applied Mathematics, "Optimization methods"

2017 - 2018: School No.1518, "Olympiad Mathematics"

2018 - current: Moscow Institue of Physics and Technology, Department of Innovation and High Technology, "Optimization methods"

2019 - 2021: Moscow Institue of Physics and Technology, The Russian Presidential Academy of National Economy and Public Administration, "Introduction to convex optimization theory"

2020 - 2021: co-creator the course "Optimization Methods for Machine Learning." MADE, Mail.ru Group

Work Experience

2013-2014: Internship at a research institute MNIIEKO TECH

2015: Internship at the Central Bank of the Russian Federation

2017: Internship at the Federal Grid Company of Unified Energy System

2018-2019: Laboratory of Numerical Methods of Applied Structural Optimization, MIPT, Junior Researcher

2019: Data scientist at GETCRM, Moscow

2019 Researcher at Huawei-MIPT group, Moscow

2020 - 2022: Ya.Z. Tsypkin Laboratory of Adaptive and Robust Systems, ICS RAS, Junior Researcher

2020 - current: Laboratory of Advanced Combinatorics and Network Applications, MIPT, Researcher

2022 - current: Laboratory of Mathematical Methods of Optimization, MIPT, Researcher

Summer Schools and Research Visits

2015: Member of 25th Jyvaskyla Summer School, Finland

2016: Member of the Traditional Summer Youth School "Control, Information and Optimization", Russia

2020: Member of The Machine Learning Summer School, Germany

2020: Laboratoire Jean Kuntzmann, Universite Grenoble Alpes, France (worked with J. Malick)

Editorial Activity, etc

● Program committee member, Organizer, 61,62 All-Russian Scientific Conference at MIPT, section of mathematical foundations of control

Awards and Achievements

● Diplomas with honours, MIPT

● Stipend of Charitable Foundation for the Development of Innovative Education, MIPT

● Increased academic scholarship at Skoltech

● Participant of the program "Ostrogradsky" 2020

Conferences and Workshops

2018: Talk at the 24th International Conference on Difference Equations and Applications

2018: Talk at the Workshop "Optimization algorithms and applications in statistical learning" slides

2020: Poster at the Conference on Neural Information Processing Systems

2021: Poster at the Conference "Optimization without Borders"

2021: Talk at the 7th international conference "Quasilinear Equations, Inverse Problems and their Applications"

2021: Talk at the 64th International MIPT Scientific Conference

2022: Talk at International conference "Mathematical Optimization Theory and Operations Research" (MOTOR 2022)

2022: Poster at the Conference on Neural Information Processing Systems

Publications

2016: Kharyonovsky A., Danilova M., Litvinova A., Mahmud T. "Estimation of influence on environment open cut and underground mining coal" Vestnik UDC 622.85: 622.33 (470)

2017: Kharyonovsky A., Danilova M., "Protection of the atmosphere at the enterprise of coal industry" Vestnik UDC 622.85 : 622.33

2018: Danilova M., Kulakova A., Polyak B. (2020) Non-monotone Behavior of the Heavy Ball Method. In: Bohner M., Siegmund S., Å imon Hilscher R., Stehlik P. (eds) Difference Equations and Discrete Dynamical Systems with Applications. ICDEA 2018. Springer Proceedings in Mathematics $\&$ Statistics, vol 312. Springer, Cham. `arxiv.org/abs/1811.00658`

2020: Gorbunov E., Danilova M., Gasnikov A. (2020) Stochastic Optimization with Heavy-Tailed Noise via Accelerated Gradient Clipping. `papers.nips.cc`

2020: Danilova M., Dvurechensky P., Gasnikov A., Gorbunov E., Guminov S., Kamzolov D., Shibaev I. (2020) Recent Theoretical Advances in Non-Convex Optimization. `https://arxiv.org/abs/2012.06188`

2021: Gorbunov E., Danilova M., Shibaev I., Dvurechensky P., Gasnikov A. (2021) Near-Optimal High Probability Complexity Bounds for Non-Smooth Stochastic Optimization with Heavy-Tailed Noise. `https://arxiv.org/abs/2106.05958`

2021: Danilova M., Malinovsky G. (2021) Averaged heavy-ball method. `https://arxiv.org/pdf/2111.05430`

2022: Danilova M. (2022) On the convergence analysis of aggregated heavy-ball method. `https://arxiv.org/abs/2203.02396`

2022: Danilova M., Gorbunov E. (2022) Distributed Methods with Absolute Compression and Error Compensation. `https://arxiv.org/abs/2203.02383`

2022: Gorbunov E., Danilova M., Dobre D., Dvurechensky P., Gasnikov A., Gidel G. (2022) Clipped Stochastic Methods for Variational Inequalities with Heavy-Tailed Noise. `https://arxiv.org/abs/2206.01095`

Languages

- English (C1)
- French (B1)

Computer Skills

Operating Systems: Microsoft Windows, Linux, Mac OSX
Programming Language: Python, R, MATLAB, PI SQL, LATEX

Social and Voluntary works:

2015-2016: Member of the aerobics team of the MIPT
2016 - current: Volunteer of organization `"PodariZhizn"`