



## Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Nationality(-ies)

Date of birth

Website

### Danilova, Marina

1, Bul'var Imeni Umberto Nobile, apt. 250, 141701, Dolgoprudny, Moscow Oblast

+7 916 468 52 12 (cell)

[danilovamarina15@gmail.com](mailto:danilovamarina15@gmail.com)(preferred); [danilovamarina15@mail.ru](mailto:danilovamarina15@mail.ru)

Russia

April 15, 1994

[marinadanya.github.io](https://marinadanya.github.io)

## Education and training

Date

Position

Organization

Department

GPA

Thesis

### September 2012 - July 2016

BSc degree in Applied Math and Physics

Moscow Institute of Physics and Technology, 9, Institutskiy per., 141701, Dolgoprudny, Russia

Control and Applied Mathematics

4.8/5.0

Research of the method of iteratively reweighted least squares

Date

Position

Organization

Department

GPA

Thesis

### September 2016 - July 2018

MSc degree in Applied Math and Physics

Moscow Institute of Physics and Technology, 9, Institutskiy per., 141701, Dolgoprudny, Russia

Control and Applied Mathematics

5.0/5.0

Non-monotone behavior of the Heavy ball method

Date

Position

Organization

Department

GPA

Thesis

### September 2016 - July 2018

MSc degree in Information Technology and Engineering

Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Building 3, 143026, Moscow, Russia

Energy Systems

4.6/5.0

The non-monotonicity effect and exact estimates of the rate of convergence of some optimization methods

Date

Position

Organization

Supervisor

### September 2018 - current

PhD in Operations research

Institute for Control Science, RAS, 65, Profsoyuznaya str, 117997, Moscow, Russia

Boris Polyak

## Research interests

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

## Teaching Experience

- 2016 - current:** Moscow Institute of Physics and Technology, Department of Control and Applied Mathematics, "Optimization methods"
- 2017 - 2018:** School No.1518, "Olympiad Mathematics"
- 2018 - current:** Moscow Institute of Physics and Technology, Department of Innovation and High Technology, "Optimization methods"
- 2019 - current:** Moscow Institute of Physics and Technology, The Russian Presidential Academy of National Economy and Public Administration, "Introduction to convex optimization theory"
- 2020 - current:** 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 - current:** Researcher at Huawei-MIPT group, Moscow
- 2020 - current:** Ya.Z. Tsyppkin Laboratory of Adaptive and Robust Systems, ICS RAS, Junior 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, Université 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:** The 24th International Conference on Difference Equations and Applications
- 2018:** Talk at Workshop "Optimization algorithms and applications in statistical learning" [slides](#)

## 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](https://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](https://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. [2020\\_Non\\_Convex\\_Optimization\\_Survey](#)

## Languages

- English (C1)
- French (B1)

## Computer Skills

**Operating Systems:** Microsoft Windows, Linux, Mac OSX

**Programming Language:** Python, R, MATLAB, C++, PI SQL, LATEX

## Social and Voluntary works:

**2015-2016:** Member of the aerobics team of the MIPT

**2016 - current:** Volunteer of organization "[PodariZhizn](#)"