Dmitry Babichev

about

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languages

native russian
C1 english
A2 french

software skills

LaTeX, C/C++, Matlab
Python, Wolfram
Mathematica

tests

GRE math: 910(98%)

Interests

mathematical statistics, probability theory, stochastic processes, optimization, discrete analysis, combinatorics, machine learning

Education

2015-expecting
March 2019   **École Normale Supérieure - Inria**
                  PhD in Machine Learning

2008-2014   **Moscow Institute of Physics and Technology**
                  BCS and MSc in applied mathematics and physics

Work experience

2012–2015   **Moscow Institute of Physics and Technology**
                  assistant professor at the Chair of Mathematical Foundation of Control
                  subjects: Probability Theory, Stochastic Processes, Discrete Analysis

2008-2012   **Lyceum №5, Dolgoprudny**
                  Teacher of algebra and geometry

Research experience

March 2017 -
March 2018   **INRIA, Paris**
                  Stochastic gradient methods enable learning probabilistic models from large amounts of data. We consider generalized linear models, that is, conditional models based on exponential families and propose averaging moment parameters instead of natural parameters for constant-step-size stochastic gradient descent.

September 2015 -
March 2017   **INRIA, Paris**
                  We consider non-linear regression problems where we assume that the response depends non-linearly on a linear projection of the covariates. We propose score function extensions to sliced inverse regression problems and show that they provably improve estimation in the population case over the non-sliced versions.

September 2012 –
June 2014   **Chair of Computer Science, MIPT**
                  Considered reverse seismic tasks for medium with cracks with five parameters. This task was solved, using different methods of optimization. Method of differential evolution was adapted to task and significantly accelerated. This research was the core of master thesis.

Awards and scolarships

2009   **Silver medal at International Mathematical Competition (IMC)**
2008   **Gold medal at International Mathematical Olympiad (IMO)**
2007, 2008   **1st place at Russian Mathematical Olympiad**

Conferences and papers

Babichev, Dmitry S. *«Circles Touching Sides And The Circumcircle For Inscribed Quadrilaterals.»* Journal of Classical Geometry Volume 1 (2012) 1 (2012): 57.

Dmitry Babichev and Francis Bach. *Slice inverse regression with score functions*. Electronic Journal of Statistics, 12(1):1507–1543, 2018.

Dmitry Babichev and Francis Bach. *Constant Step Size Stochastic Gradient Descent for Probabilistic Modeling.* (accepted to UAI 2018 as oral presentation)