Aleksei K. Sholokhov **aksh@uw.edu**

Contact Information

University of Washington
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Personal Site
GitHub
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Research Interests

Focused on optimization techniques for mixed-effect models in population health.
Broadly: statistical models, machine learning, nonconvex optimization.

Research Experience

Institute for Health Metrics and Evaluation, UW August, 2019 - Present

Graduate Research Assistant in Math Science Team. Projects:

- Developed pipeline that forecasts deaths from COVID-19 for the IHME Projections.
- SkMixed: SciKit-Learn compatible tool for selecting features in mixed models.

Grenoble Informatics Laboratory, UGA March, June, October 2018

Visiting Research Student working on large-scale multi-label classification. Pre-print

Center for Nonlinear Studies, LANL January, 2018

Visiting Research Student working on reinforcement learning in demand-response problems for power systems control. This work resulted in my bachelor thesis.

Publications

1. Modeling COVID-19 scenarios for the United States. IHME Covid-19 Forecasting Team (methods contributor). *Nature Medicine*.

Preprints

1. "MEMOIR: Multi-class Extreme Classification with Inexact Margin." Belyy, A., **Sholokhov. A.,** *arXiv preprint arXiv:1811.09863 (2018).*

Conferences

1. "Quality Evaluation and Improvement for Hierarchical Topic Modelling.", Belyy A.V., Selezniova, M.S., **Sholokhov, A.,** and Vorontsov, K., *24rd International Conference on Computational Linguistics and Intellectual Technologies*
2. "Heterogeneous Aggregation of Text Data into Hierarchical Topic Models" Selezniova, M.S., Belyy A.V., and **Sholokhov, A.**, 2017. *60th Scientific MIPT Conference.*
3. "Conditional Coordinate Descent Method for Large-Scale Statistical Estimations" 2017. **Sholokhov, A.**, *60th Scientific MIPT Conference.*

Poster Sessions and Talks

1. "Conditional Coordinate Descent Method for Large-Scale Statistical Estimations" **Sholokhov, A.**, 2017. *2nd Physics Informed Machine Learning*

Teaching Experience

Teaching Associate in University of Washington — January 2019 – Present

- Calculus with Analytic Geometry II — Winter 2019
- Calculus with Analytic Geometry II — Spring 2019
- Scientific Computing in MATLAB — Fall 2019
- Optimization: Fundamentals and Applications — Winter 2020
- High Performance Scientific Computing — Spting 2020

Teaching Assistant in Remote High School of MIPT — September 2015 – 2016

- Mathematics, General Physics

Education

University of Washington, Seattle, USA — Graduation in June 2023

Ph.D. Student in the Department of Applied Mathematics;

- Research Advisor: Aleksander Aravkin

Moscow Institute of Physics and Technology, Moscow, Russia — July 2018

B.Sc. in Applied Mathematics and Physics,
Department of Control and Applied Mathematics

- Thesis Title: *Multi-armed Bandits in Demand-Response Problems*
- Research Advisor: Yury Maximov

Awards

Study Awards

- University of Washington's Top Scholar Award, — September 2018
- MIPT Scholarship "For Outstanding Studying Effort" — December 2015

Other Achievements and Awards

Competitions and Contests:

- First prize in Microsoft Imagine Cup 2015 regional final — April, 2015
- First prize in Business Case Solving Contest "Changellenge 2013"

Social and Other Experience

- University Case Club President in ITMO University — May 2014 - April 2015

Hardware and Software Skills

Computer Programming:

- GitHub: aksholokhov
- Python, MATLAB, C/C++, Java, Scala

Other Skills

Languages:

- English – Advanced (C1). TOEFL IBT: 106/120.
- Russian – Native