Dmitrii M. Ostrovskii — October 30, 2021

Contact Information

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Research Interests

- ***Statistics:*** robust and adaptive estimation, testing, sparsity, nonparametrics.
- ***Optimization:*** first-order methods, minimax problems, performance estimation.
- ***Learning theory:*** fast convergence rates for smooth losses.
- ***Signal processing:*** estimation with shift-invariant structure, super-resolution.

Current Position

Assistant Professor (RTPC) of Mathematics *09/2021–present*
University of Southern California

Previous Positions

Postdoctoral Scholar *08/2019–08/2021*
University of Southern California, Viterbi School of Engineering
Hosted by Meisam Razaviyayn

ERCIM Alain Bensoussan Postdoctoral Fellow *02/2018–06/2019*
Inria Paris, France
Hosted by Francis Bach

Visiting PhD Student *12/2016–05/2017*
University of Washington, Seattle
Hosted by Zaid Harchaoui

Degrees

PhD, University of Grenoble *10/2014–01/2018*

- Thesis: *Adaptive Signal Recovery by Convex Optimization*
  Advisors: Anatoli Juditsky, Zaid Harchaoui

MSc, Moscow Institute of Physics and Technology *09/2012–07/2014*

- Thesis: *Concentration Inequalities for the Exponential Weighting Method*
  Advisor: Yuri Golubev

BSc, Moscow Institute of Physics and Technology *09/2008–07/2012*

- Thesis: *Analytical Study of NHDP Link Management Protocol*

Preprints and Working Papers

Nonconvex-Nonconcave Min-Max Optimization with a Small Maximization Domain
D. Ostrovskii, B. Barazandeh, M. Razaviyayn. *arXiv:2110.03950, 2021*

Near-Optimal Procedures for Model Discrimination with Non-Disclosure Properties
D. Ostrovskii, M. Ndaoud, A. Javanmard, M. Razaviyayn. *arXiv:2012.02901, 2020*

Efficient Primal-Dual Algorithms for Large-Scale Multiclass Classification
D. Babichev, D. Ostrovskii, F. Bach. *arXiv:1902.03755, 2019*

Structure-Blind Deconvolution via Convex Optimization
D. Ostrovskii, A. Juditsky. *Available upon request, 2018*

Book Chapters

Adaptive Denoising of Signals with Shift-Invariant Structure
D. Ostrovskii, Z. Harchaoui, A. Judistky, A. Nemirovski. *arXiv:1806.04028, 2020*
Foundations of Modern Statistics: V. Spokoiny's 60th Anniversary Festscrift, to appear

Journal Publications

Efficient Search of First-Order Nash Equilibria in Nonconvex-Concave Smooth Min-Max Problems
D. Ostrovskii, A. Lowy, M. Razaviyayn. *arXiv:2002.07919, 2020*
SIAM Journal on Optimization, 31:4, pp. 2508-2538, 2021

Finite-Sample Analysis of M-Estimators Using Self-Concordance
D. Ostrovskii, F. Bach. *arXiv:1810.06838, 2018*
Electronic Journal of Statistics, 15:1, pp. 326-391, 2021

Concentration Inequalities for the Exponential Weighting Method
Y. Golubev, D. Ostrovskii.
Mathematical Methods of Statistics, 23:1, pp. 20-37, 2014

A Dynamic Channel Reservation Method for Multimedia Streaming in Wi-Fi Mesh Networks
A. Krasilov, A. Lyakhov, D. Ostrovskii, E. Khorov. *Automation and Remote Control, 74:9, pp. 1460-1473, 2013*

Analytical Study of the Quality of Links Established by the Neighbourhood Discovery Protocol
A. Lyakhov, D. Ostrovskii, E. Khorov. *Journal of Communications Technology and Electronics, 57:12, pp. 1314-1321, 2012*

Refereed Conference Publications

Affine Invariant Covariance Estimation for Heavy-Tailed Distributions
D. Ostrovskii, A. Rudi. *arXiv:1902.03086, COLT 2019*

Beyond Least-Squares: Fast Rates for Regularized Empirical Risk Minimization through Self-Concordance
U. Marteau-Ferey, D. Ostrovskii, A. Rudi, F. Bach. *arXiv:1902.03046, COLT 2019*

Efficient First-Order Algorithms for Adaptive Signal Denoising
D. Ostrovskii, Z. Harchaoui. *arXiv:1803.11262, ICML 2018*

Structure-Blind Signal Recovery
D. Ostrovskii, Z. Harchaoui, A. Juditsky, A. Nemirovski. *arXiv:1607.05712, NeurIPS 2016*

Adaptive Recovery of Signals by Convex Optimization
Z. Harchaoui, A. Juditsky, A. Nemirovski, D. Ostrovskii. *hal:01250215, COLT 2015*

Dynamic Resource Allocation for MCCA-Based Streaming in Wi-Fi Mesh Networks
E. Khorov, A. Krasilov, A. Lyakhov, D. Ostrovskii. *WiFlex 2013*

Analytical Study of Neighborhood Discovery and Link Management in OLSR
E. Khorov, A. Kiryanov, A. Lyakhov, D. Ostrovskii *IFIP 2012*

Reviewing service Mathematical Programming, SIAM Journal on Optimization (SIOPT), Annals of Statistics, Journal of Machine Learning Research, NeurIPS, ICML, COLT, ALT

Teaching

USC, 2021–2022: Introduction to Mathematical Statistics (instructor)

USC, 2019–2021: Optimization for Machine Learning (invited lecturer)

UGA, 2015–2017: Calculus for Science and Engineering (in French, "Cours–TD")

UGA, 2015–2016: Statistical Methods for Biology and Medicine (in French, "TP")

Talks

2021

- Johns Hopkins University, AMS seminar — invited talk
  Nonconvex-Nonconcave Min-Max Optimization with a Small Maximization Domain
- Universitat Pompeu Fabra, Barcelona — job talk, zoom
  University of Southern California
  École Polytechnique Fédérale de Lausanne — job talk, zoom
  Weierstrass Institute, Berlin — zoom
  Near-Optimal Methods for Model Discrimination with Non-Disclosure Properties

2019

- University of Southern California, Epstein Seminar
  On Fast Rates in Empirical Risk Minimization Beyond Least-Squares
- COLT 2019, Phoenix
  Optimization and Statistical Learning workshop, Les Houches (poster)
  Affine Invariant Covariance Estimation for Heavy-Tailed Distributions
- Toyota Technological Institute, Chicago
  Algorithmic Efficiency and Statistical Optimality in Empirical Risk Minimization

2018

- ICML 2018, Stockholm (poster)
  Optimization and Learning workshop, Toulouse (poster)
  CWI–Inria Workshop, Paris
  Finite-Sample Analysis of M-Estimators Using Self-Concordance
- ICML 2018, Stockholm
  Efficient First-Order Algorithms for Adaptive Signal Denoising
- CWI seminar, Amsterdam
  SIERRA Team seminar, INRIA, Paris
  PhD Thesis Defense, Univ. Grenoble Alpes
  Adaptive Signal Recovery by Convex Optimization

2015–2017

- NeurIPS 2016, Barcelona (poster)
  Structure-Blind Signal Recovery
- Université Grenoble Alpes
  University of Göttingen
  IRIT, Toulouse
  ORFE, Princeton
  University of Washington, Seattle
  PGMO Days 2016, Paris
  COLT 2015, Paris
  Adaptive Signal Denoising by Convex Optimization

Honors & Awards
NeurIPS 2019 Best Reviewer (awarded to 400 reviewers out of 4500+)
COLT 2019 Travel Award
HDSI Postdoctoral Fellowship at UC San Diego, 2019–2021 (declined)
ERCIM Alain Bensoussan Postdoctoral Fellowship, 2018–2019
NVIDIA GPU Grant, 2017
NIPS 2016 Travel Award
Increased State Academic Scholarship of the Russian Government, 2012–2014
Abramov-Frolov Fund Scholarship, 2009–2011

Scientific schools
Structural Inference 2016, Brodten
GPU for Signal and Image Processing 2015, Grenoble
Machine Learning Summer School 2015, Kyoto
Khronos-Persyvact Spring School 2015, Grenoble
Microsoft School on Algorithms for Massive Data 2013, Moscow

Other Activities
Mathematical blog: `https://ostrodmit.github.io/blog`

Languages
English (quasi-native level, 113/120 ToEFL)
Russian (native)
French (fluent, 5 years of living in France)
German (written/oral comprehension)