

ARSHAK MINASYAN

pointguard0.github.io

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MAIN RESEARCH INTERESTS

1. High-dimensional statistics
2. Robust Statistics
3. Statistical Learning Theory

ACADEMIC POSITIONS

CentraleSupélec, Université Paris-Saclay
Assistant Professor (tenure track) of Statistics

Paris, France
October 2023 – present

CREST-ENSAE, IP Paris
Postdoctoral fellow
Host: Arnak Dalalyan

Paris, France
September 2021 – September 2023

ADVANCE Grant Program: Machine Learning Group
Senior Researcher
Junior Researcher

Yerevan, Armenia
September 2021 – September 2023
September 2020 – September 2021

YerevaNN Research Lab¹
Machine Learning Researcher

Yerevan, Armenia
September 2018 – September 2021

EDUCATION

Yerevan State University (YSU)
PhD in Mathematics

Yerevan, Armenia
January 2021

Thesis title: *Robust Minimax Estimation within the Domain of Computational Tractability*

Skolkovo Institute of Science and Technology (SkolTech)

Master of Science in Mathematics with *Academic Excellence* and *Best Thesis Awards*

Moscow, Russia
June 2018

Yandex School of Data Analysis (YSDA)

Master of Science in Computer Science (concurrent with the last year of HSE)

Moscow, Russia
June 2017

National Research University Higher School of Economics (HSE)

Major in Mathematics with *Academic Excellence Award*, 2nd/320

Moscow, Russia
June 2016

PUBLICATIONS

12. E. Chzhen, A. Minasyan. Sharp oracle inequality for sparse robust mean estimation via linear programming, *work in progress*, 2023+.
11. A. Minasyan, S. Hunanyan, T. Galstyan, E. Vardanyan, A. Dalalyan. Guaranteed Optimal Generative Modeling with Maximum Deviation from the Empirical Distribution, *arXiv preprint arXiv:2307.16422*, 2023.
10. T. Galstyan, A. Minasyan. Optimality of the Least Sum of Logarithms in the Problem of Matching Map Recovery in Presence of Noise and Outliers, *Accepted to Armenian Journal of Mathematics*, 2023.
9. A. Minasyan, N. Zhivotovskiy. Statistically Optimal Mean Estimation for Nonisotropic Gaussians under Adversarial Contamination. *arXiv preprint arXiv:2301.09024 (submitted to AOS)*, 2023.
8. A. Minasyan, T. Galstyan, S. Hunanyan, A. Dalalyan. Matching Map Recovery with an Unknown Number of Outliers. *Accepted to AISTATS*, 2023.
7. A.-H. Bateni, A. Minasyan, A. Dalalyan. Nearly minimax robust estimator of the mean vector by iterative spectral dimension reduction, *arXiv preprint arXiv:2301.09024 (submitted to JRSS-B)*, 2022.
6. T. Galstyan, A. Minasyan, A. Dalalyan. Optimal detection of the feature matching map in presence of noise and outliers, *Electronic Journal of Statistics*, 16 (2): 5720-5750, 2022.
5. A. Dalalyan, A. Minasyan. All-In-One Robust Estimator of the Gaussian Mean, *Annals of Statistics*, 50 (2), 1193-1219, 2022.

¹<https://yerevann.com/>

4. T. Galstyan, A. Minasyan. On Random Weighted Sum of Positive Semi-Definite Matrices, *Proceedings of the YSU A: Physical and mathematical sciences*, 54, 96–100, 2020.
3. A. Minasyan. Excess-Risk consistency of group-hard thresholding estimator in Robust Estimation of Gaussian Mean, *Journal of Contemporary Mathematical Analysis*, 55, 208–212, 2020.
2. A. Minasyan, B. Polyak. Minimization over Stiefel manifold: Robust PCA and eigenvalue problem. *submitted to Computational Optimization and Applications*, 2020.
1. A. Minasyan. Alternating Least Squares for Generalized Linear Models. *Journal of Contemporary Mathematical Analysis*, 54, 302–321, 2019.

INTERNSHIPS

CREST-ENSAE, IP Paris

Visiting Scholar

Paris, France
May 2019 - July 2019

Host: Arnak Dalalyan

Yandex LLC

Machine Learning Intern, Yandex.Weather team

Moscow, Russia
June 2017 – September 2017

Institute for Information Transmission Problems (IITP)

Junior Researcher

Moscow, Russia
June 2016 - June 2018

Host: Vladimir Spokoiny

International Laboratory of Stochastic Analysis and its Applications, HSE

Research Assistant

Moscow, Russia
June 2015 - May 2016

Host: Valentin Konakov

CONFERENCES, TALKS, AND WORKSHOPS

Meeting in Mathematical Statistics

2023, Luminy, France

Séminaire de probabilités et statistiques du LJAD, Université Côte d'Azur

2023, Nice, France

S³ – The Paris-Saclay Signal Seminar, CentraleSupélec

2023, Paris, France

Séminaire de probabilités et statistiques du LAMA, Université Gustave Eiffel

2023, Paris, France

Meeting in Mathematical Statistics

2022, Luminy, France

Séminaire de statistiques de Institut de Mathématiques de Bourgogne

2022, Dijon, France

Séminaire de Statistique du LPSM, Sorbonne Université

2022, Paris, France

Optimal Transport, Statistics, Machine Learning and moving in between

2022, Eindhoven, Netherlands

International Conference on Computational Statistics (COMPSTAT)

2022, Bologna, Italy

Hi! PARIS Summer School

2022, Paris, France

International Symposium on Nonparametric Statistics

2022, Paphos, Cyprus

Princeton Machine Learning Theory Summer School

2022, Princeton, USA

Meeting in Mathematical Statistics

2021, Luminy, France

Modern methods of information theory and optimization

2021, Sochi, Russia

International Conference Dedicated to the 100th Anniversary of YSU

2019, Yerevan, Armenia

Science and Technology Convergence Conference. NAS RA

2019, Yerevan, Armenia

Structural Inference in High-Dimensional Models 2

2019, Saint-Petersburg, Russia

21st European Young Statisticians Meeting

2019, Belgrade, Serbia

9th Lisbon Machine Learning School

2019, Lisbon, Portugal

12th International Conference on Numerical Optimization and Numerical Linear Algebra

2019, Jiangxi, China

International Conference on Mathematical Optimization

2019, Beijing, China

XIII Annual Research Conference

2018, Yerevan, Armenia

Science and Technology Convergence. NAS RA	2018, Yerevan, Armenia
Structural Inference in High-Dimensional Models. Higher School of Economics	2018, Moscow, Russia
Summer School in Machine Learning. Yerevan State University	2018, Yerevan, Armenia
Summer School in Random Matrices. University of Michigan	2018, Michigan, USA
Summer School: Information theory: Inequalities, Distances and Analysis	2018, Paris, France
New frontiers in high-dimensional probability and statistics	2018, Moscow, Russia
Yerevan State University (YSU) 4th International Conference	2017, Yerevan, Armenia
Generation-Y Conference	2017, Sochi, Russia
Introductory Workshop: Phenomena in high dimensions	2017, Berkeley, USA
Gene Golub Siam Summer School 2017 Annual Meeting	2017, Berlin, Germany
Summer School on Lèvy Processes	2016, Lille, France
Bayesian Statistics and Algorithms (Thematic Month on Statistics - Week 5)	2016, Marseille, France
Workshop on Group Representation in Dynamical Systems and Geometry	2015, Marseille, France

TEACHING

CREST-ENSAE	Paris, France
· Teaching Assistant in “Statistique 2”	Spring 2023
· Project “Modelisation statistique” for 2 nd year ENSAE students	Spring 2023
Université Paris-Saclay, Laboratoire de Mathématiques d’Orsay	Paris, France
· “Statistical theory of algorithmic fairness”	Spring 2023
Yerevan State University (YSU)	Yerevan, Armenia
· Teaching Assistant in “Probability Theory I” Fall 2019-2020	
· Teaching Assistant “Stochastic Processes” Fall 2020	
· Lecturer of “High-dimensional Statistics” Spring 2020	
· Teaching Assistant in “Probability Theory II” Spring 2020	
Skolkovo Institute of Science and Technology (SkolTech)	Moscow, Russia
· Teaching Assistant in “Biostatistics” Spring 2018	
National Research University Higher School of Economics (HSE)	Moscow, Russia
· Head Teaching Assistant in “Statistical Methods in Machine Learning” Fall 2017	
· Head Teaching Assistant in “Statistics of Stochastic Processes” Spring 2017, 2018	
· Teaching Assistant in “Probability Theory and Statistics I, II” 2014, 2015	

AWARDS, HONORS AND ACHIEVEMENTS

EIF PhD Support Program	2020–2021, Yerevan
Research Grant for Young Scientists by Science Committee of Armenia	2020–2021, Yerevan
FAST Research Travel Grant	2019, Yerevan
Best Thesis Award at Skoltech	2018, Moscow
Best Speech Award in YSU 4th International Conference	2017, Yerevan
Best Undergraduate Research Award at HSE	2016, Moscow
HSE Olympiad in Applied Mathematics and Informatics: 2nd prize, 2nd absolute place	2015–2016, Moscow
Moscow Institute of Physics and Technology (MIPT) Olympiad in Mathematics: 1st prize	2016, Moscow
Jaguar Game Changer Scholarship Winner	2015, Moscow
International Mathematical Olympiad (IMO): Participation and Honourable Mention	2011, Amsterdam

SERVICE

I (co-)organize

- Reading group based on the book “Algorithmic High-Dimensional Robust Statistics” Paris, France
- StatEcoML seminar held in CREST-ENSAE Paris, France
- Yerevan Machine Learning Reading Group Yerevan, Armenia

I am a reviewer for

- **Conferences:** ALT, COLT, ICML, NeurIPS.
- **Journals:** Bernoulli, Annals of Statistics, Electronic Journal of Statistics, Journal of the Royal Statistical Society: Series B, SIAM Journal on Mathematics of Data Science (SIMODS).

SKILLS

Programming: C/C++, Python, Julia, R, MATLAB, Mathematica, Git, Vim, \LaTeX .

Foreign Languages: Bilingual in Armenian and Russian. Fluent in English and French.