Avetik Karagulyan

Personal Data

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Work Experience

Current Nov 2021	Postdoctoral fellow at KAUST *Optimization and Machine Learning Lab supervised by Peter Richtárik*
Sept 2018 - May 2021	ENSAE *Teaching Associate of Probability theory, Statistics, Functional analysis, Measure theory and Intro to ML courses*
Apr - Sept 2018	Research intern at ENSAE/CREST *Supervised by Arnak Dalalyan*
Jun - Aug 2017	Innovative Solutions and Technologies Center *Math trainer for high-school students*
Sept 2016 - May 2017	American University of Armenia *Teaching Associate of Probability theory and Statistics courses*

Education

June 2021	Ph.D. in Applied Mathematics Institut Polytéchnique de Paris, ENSAE, CREST *Supervised by Arnak Dalalyan*
Sept 2018	Master 2 - MVA (Mathematics, Vision, Learning) École normale supérieure Paris-Saclay, Cachan, France *Mention: Très bien (GPA: 4.0)*
July 2017	Bachelor in Mathematics Yerevan State University, Yerevan, Armenia *GPA: 20/20*
June 2013	High-school degree PhysMath school after A.Shahinyan, Yerevan, Armenia

Publications

"Convergence of Stein Variational Gradient Descent under a Weaker Smoothness Condition", Lukang Sun, Avetik Karagulyan and Peter Richtàrik | arXiv preprint arXiv:2206.00508

"Sampling with the Langevin Monte-Carlo", Avetik Karagulyan | Ph.D. thesis defended in Institut Polytéchnique de Paris

"Penalized Langevin dynamics with vanishing penalty for smooth and log-concave targets", Avetik Karagulyan, Arnak Dalalyan | Accepted to NeurIPS 2020.

"Bounding the error of discretized Langevin algorithms for non-strongly log-concave targets", Arnak Dalalyan, Avetik Karagulyan and Lionel Riou-Durand | Published in the Journal of Machine Learning Research

"Non-Asymptotic Guarantees For Sampling by Stochastic Gradient Descent", Avetik Karagulyan, Journal of Contemporary Mathematical Analysis (Armenian Academy of Sciences) 54.2 (2019): 71-78

"User-friendly guarantees for the Langevin Monte Carlo with inaccurate gradient ", Arnak S. Dalalyan, Avetik G. Karagulyan | Stochastic Processes and their Applications 129.12 (2019): 5278-5311.

"Existence of positive solutions for an approximation of stationary mean-field games", Diogo Gomes et al. | Involve, a Journal of Mathematics Vol. 10 (2017), No. 3, 473493

Talks and Conferences

2022 November	Virtual presentation for "Quantitative Methods Area Seminar" Krannert School of Management| Purdue University	Talk
2022 June	Summer school in "Statistical Physics and Machine Learning" Les Houches, France	Poster
2022 June	Conference on the Mathematics for Complex Data Stockholm, Sweden	Poster
2022 June	International Symposium on Non-parametric Statistics Paphos, Cyprus	Poster
2021 November	Journées MAS 2020	Talk
2021 June	Ph.D. defense in ENSAE
2020 December	Meeting in Mathematical Statistics	Talk
2020 December	33-rd Neural Information Processing Systems	Poster
2020 July	Joint Structures and Common Foundations of Statistical Physics, Information Geometry and Inference for Learning (SPIGL20) Les Houches, France	Poster
2020 March	Optimization for Machine Learning, Luminy, France
2019 December	Meeting in Mathematical Statistics, Luminy, France
2019 April	Seminar at Télécom ParisTech, Paris, France	Talk
2019 April	8èmes Rencontres des Jeunes Statisticiens (RJS 2019) Porquerolles, France	Talk
2019 March	YES X : "Understanding Deep Learning: Generalization, Approximation and Optimization", Eindhoven, Netherlands, Poster
2016 July	3rd Summer school "Mathematics and Applications", Tsaghkadzor, Armenia
2015 Aug	Visiting Student Research Program "Applied Differential Equations", KAUST
2015 July	2nd Summer school "Mathematics and Applications", Tsaghkadzor, Armenia
2014 July	1st Summer school "Mathematics and Applications", Tsaghkadzor, Armenia

Reviewing

AISTATS, NEURIPS, ICML, Stochastic Processes and their Applications, Bernoulli, Annals of Applied Probabilty, Statistics and Computing.

Organization

Symposium	We organize a mini-symposium called "Wasserstein gradient flows and applications" at SIAM OP23, with Anna Korba and Adil Salim.

Languages

Armenian:	Mothertongue
Russian:	Full professional
English:	Full professional
French:	Full professional

Awards and prizes

Silver Medal	IMC 2017 Blagoevgrad, Bulgaria
Bronze Medal	IMC 2016 Blagoevgrad, Bulgaria
Silver Medal	IMC 2015 Blagoevgrad, Bulgaria
Gold Medal	2017, Awarded by Yerevan State University
	For high academic performance and participation in olympiads
Best Student of Faculty	2015, Awarded by Yerevan State University
Honourable Mention	IMO 2013 Santa Marta, Colombia
Honourable Mention	IMO 2012 Mar del Plata, Argentina
Semi-finalist	ACM-ICPC 2015 Tbilisi, Georgia
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Semi-finalist	ACM-ICPC 2013 Tbilisi, Georgia
2nd Prize	Mirror of William Lowell Putnam Mathematical Competition 2016
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