

Zhirayr Tovmasyan

Contact Information

Affiliation: KAUST, Thuwal, Saudi Arabia
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Research Interests

Optimization, Machine learning, Federated learning

Education

September 2025 – Present	M.Sc. in Computer Science KAUST , Thuwal, Saudi Arabia Expected graduation: December 2026
September 2018 – June 2024	B.Sc. in Computer Science GPA: 19.3/20, Yerevan State University , Yerevan, Armenia
June 2018	High school diploma PhysMath School after A. Shahinyan

Publications and Preprints

JNVA 2026	Z. Tovmasyan , G. Malinovsky, L. Condat, P. Richtárik, “ Revisiting Stochastic Proximal Point Methods: Generalized Smoothness and Similarity ,” <i>Journal of Nonlinear and Variational Analysis</i> (JNVA), 10(3):471–505, 2026. Also accepted at OPT 2025 .
ICLR 2026	K. Gruntkowska, A. Gaponov, Z. Tovmasyan , P. Richtárik, “ Error Feedback for Muon and Friends ,” <i>International Conference on Learning Representations</i> (ICLR), 2026 (Poster).
arXiv	Z. Tovmasyan , A. Maranjyan, P. Richtárik, “ Rennala MVR: Improved Time Complexity for Parallel Stochastic Optimization via Momentum-Based Variance Reduction ,” <i>arXiv preprint</i> , 2026.
Under Review	E. Shulgin, Z. Tovmasyan , S. Khirirat, P. Richtárik, “Scaled Momentum Variance Reduction in Non-Euclidean Geometry,” <i>manuscript under review</i> .

Research and Professional Experience

June 28 – August 28, 2026	Research Intern <i>CISPA Helmholtz Center for Information Security</i> — under the supervision of Prof. Sebastian Stich Developed new theory for FedMuon and SCAFFOLD.
April 2025 – July 2025	Remote Visiting Student <i>Center of Excellence for Generative AI, KAUST</i> — under the supervision of Prof. Peter Richtárik
September 2024 – March 2025	Visiting Student <i>Center of Excellence for Generative AI, KAUST</i> — under the supervision of Prof. Peter Richtárik
October 2023 – September 2024	Junior ML Engineer <i>Aerodynamics LLC</i> Computer vision: aerial mapping, path planning, and object detection.
September 2022 – June 2024	Member of Student Scientific Society <i>Yerevan State University</i>

January 2022 – October 2023	Student and Junior Research Assistant <i>Center for Scientific Innovation and Education</i>
January 2019 – January 2021	Military Service <i>Armenian Armed Forces</i>

Projects

January 2024 – September 2024	Neural Combinatorial Optimizer — under the supervision of Dr. Areg Karapetyan
December 2023 – June 2024	Langevin Sampling: Convergence and Experiments — under the supervision of Dr. Avetik Karagulyan

Conferences and Workshops

April 23–27, 2026	“International Conference on Learning Representations (ICLR) 2026” (Poster Presenter) Rio de Janeiro, Brazil
February 9–11, 2026	“KAUST Rising Stars in AI Symposium 2026” (Poster Presenter) KAUST, Saudi Arabia
November 24–26, 2025	“Distributed Training in the Era of Large Models” KAUST, Saudi Arabia
November 17–21, 2024	“Statistics for Learning from Complex Data: Foundations and Applications” KAUST, Saudi Arabia

Achievements and Awards

2022	Third Prize, Open Mathematical Olympiad for University Students (Team Competition)
2018	Second Place, Physics Olympiad organized by ASPU Yerevan

Technical Skills

Programming:	Python, C++, SQL
ML/Scientific:	PyTorch, NumPy, SciPy

Languages

Armenian:	Native
English:	Fluent
Russian:	Fluent

Hobbies and Interests

Reading, Board games, Football, Squash, Hiking