

Artavazd Maranjyan

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Education

- **Ph.D. in Computer Science** **Thuwal, Saudi Arabia**
King Abdullah University of Science and Technology (KAUST)
2023 – Present
Advisor: Peter Richtárik
- **M.Sc. in Applied Statistics and Data Science** **Yerevan, Armenia**
Yerevan State University
2021 – 2023
■ Thesis: [On local training methods](#); co-supervisors: Peter Richtárik, Mher Safaryan
- **B.Sc. in Informatics and Applied Mathematics** **Yerevan, Armenia**
Yerevan State University
2017 – 2021
■ Thesis: [On the Convergence of Series in Classical Systems](#); supervisor: Martin Grigoryan

Academic Experiences

- **Research visit to Yi-Shuai Niu** **Beijing, China**
Beijing Institute of Mathematical Sciences and Applications (BIMSA)
9-22 March 2025
 - Gave talks at three universities (PKU, BUAA, BIMSA)
 - Worked with Professor Yi-Shuai Niu on a project on Server-Assisted Federated Learning
- **Researcher in the group of Martin Grigoryan** **Yerevan, Armenia**
Yerevan State University
April 2023 – Aug 2023
 - Studied the existence and properties of universal functions with respect to the Vilenkin and Haar systems across various functional spaces
- **Machine Learning Researcher** **Yerevan, Armenia**
YerevaNN
March 2023 – Aug 2023
 - Worked on the intersection of Federated Learning and Optimization
- **Internship in the group of Peter Richtárik** **Thuwal, Saudi Arabia**
King Abdullah University of Science and Technology (KAUST)
June 2022 – Jan 2023
 - Worked on the "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity" paper
- **Machine Learning Researcher** **Yerevan, Armenia**
YerevaNN
Jan 2022 – June 2022
 - Worked on the intersection of Federated Learning and Optimization

Industry Experiences

- **Co-Founder** **Yerevan, Armenia**
OnePick
July 2021 – June 2022
OnePick is an emerging startup that provides up-to-date and customized social media posts based on page and market data analysis
 - Winner idea of [InVent 2.0](#) venture building program organized by FAST
- **Backend Developer** **Yerevan, Armenia**
EXALT Technologies Ltd
July 2021 – Sep 2021
 - Worked for Nutanix.
- **Machine Learning Research Engineer** **Yerevan, Armenia**
Foundation for Armenian Science and Technology (FAST)
June 2021 – July 2021

- Worked on Fraud detection
- Made data-driven forecasts using machine learning algorithms and statistical models

Software Engineer in Test

Yerevan, Armenia

Sep 2019 – Jan 2021

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- Worked with automation team to design and develop automated solutions across several mobile/web applications
- Worked directly with software developers, test engineers, product owners, business analysts to find and resolve issues
- Worked closely with DevOps to suggest improvements in processes and in Jenkins Continuous Integration cycle

Awards

Dean's Award

- King Abdullah University of Science and Technology (KAUST) Sep 2023
Awarded to a few top students accepted to KAUST (6000\$ annually for 3 years)

Outstanding Final Project Award

- Yerevan State University May 2021
Recognized for the Bachelor's thesis (awarded to 6 students among 250+ students)

Publications (in reverse order of preparation)

9. **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning**
Artavazd Maranjyan, El Mehdi Saad, Peter Richtárik, Francesco Orabona
[arXiv:2502.00775](#), 2025
8. **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity**
Artavazd Maranjyan, Alexander Tyurin, Peter Richtárik
[arXiv:2501.16168](#), 2025
7. **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**
Artavazd Maranjyan, Omar Shaikh Omar, Peter Richtárik
OPT 2024: Optimization for Machine Learning (NeurIPS workshop)
Oral presentation (top 5% of 107 submissions)
6. **Differentially Private Random Block Coordinate Descent**
Artavazd Maranjyan, Abdurakhmon Sadiev, Peter Richtárik
OPT 2024: Optimization for Machine Learning (NeurIPS workshop)
5. **LoCoDL: Communication-Efficient Distributed Learning with Local Training and Compression**
Laurent Condat, Artavazd Maranjyan, Peter Richtárik
ICLR 2025: The Thirteenth International Conference on Learning Representations
Spotlight presentation (top 5.1% of the submitted papers)
4. **Menshov-type theorem for divergence sets of sequences of localized operators**
Martin Grigoryan, Anna Kamont, Artavazd Maranjyan
[Journal of Contemporary Mathematical Analysis](#), vol. 58, no. 2, pp. 81–92, 2023
3. **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity**
Artavazd Maranjyan, Mher Safaryan, Peter Richtárik
[arXiv:2210.16402](#), 2022

2. On the divergence of Fourier series in the general Haar system

Martin Grigoryan, Artavazd Maranjyan

Armenian Journal of Mathematics, vol. 13, pp. 1–10, 2021

1. On the unconditional convergence of Faber-Schauder series in L^1

Tigran Grigoryan, Artavazd Maranjyan

Proceedings of the YSU A: Physical and Mathematical Sciences, vol. 55, no. 1 (254), pp. 12–19, 2021

Academic and Professional Involvement

Reviewer

SIAM Journal on Mathematics of Data Science (SIMODS) 2024

Transactions on Machine Learning Research (TMLR) 2024-2025

The Journal of Machine Learning Research (JMLR) 2024

Mentorship

Co-mentored a group of schoolgirls from diverse backgrounds and grades on a STEM project. The students conducted chemical experiments and developed an educational website to document and share their findings. I primarily supported the website's creation. [[website](#)] [[certificate](#)]

Organized weekly group seminars

KAUST

KAUST, Saudi Arabia

Sep 2023 - Dec 2023

Talks and Poster Presentations

2025 Talks and Poster Presentations.....

21. **Machine Learning Reading Group** Yerevan, Armenia
YSU Krisp-AI Lab March 28, 2025
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]
20. **Flower AI Summit 2025** London, England
King's House March 26, 2025
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]
19. **Academic Report of the School of Mathematical Sciences** Beijing, China
Beihang University (BUAA) March 17, 2025
Invited by Jiaxin Xie to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]
18. **Optimization Seminar** Beijing, China
Beijing Institute of Mathematical Sciences and Applications (BIMSA) March 13, 2025
Invited by Yi-Shuai Niu to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]
17. **Seminar** Beijing, China
Peking University March 12, 2025
Invited by Kun Yuan to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]
16. **AMCS/STAT graduate seminar** KAUST, Saudi Arabia
KAUST February 27, 2025
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)]

2024 Talks and Poster Presentations.....

15. **Workshop on Optimization for Machine Learning (NeurIPS 2024)** **Vancouver, Canada**
December 15, 2024
Vancouver Convention Center
Presented
 - **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** (Oral presentation, top 5% of 107 submissions) [video]
 - **Differentially Private Random Block Coordinate Descent**
 - **LoCoDL: Communication-Efficient Distributed Learning with Local Training and Compression**
14. **MLR Weekly Seminar** **Online**
November 21, 2024
Machine Learning Research at Apple
Invited by **Samy Bengio** to give a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** [slides]
13. **International Conference on Algebra, Logic, and their Applications** **Online**
October 18, 2024
Yerevan State University
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**
12. **CEMSE E-Poster Competition** **KAUST, Saudi Arabia**
October 10, 2024
KAUST
Awarded 3rd place for presenting a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity**.
11. **Analysis, PDEs and Applications** **Yerevan, Armenia**
July 6, 2024
Yerevan State University
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** [abstract]
10. **Stochastic Numerics and Statistical Learning** **KAUST, Saudi Arabia**
May 27, 2024
KAUST
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]
9. **CS 331: Stochastic Gradient Descent Methods** **KAUST, Saudi Arabia**
May 5, 2024
KAUST
Delivered a guest lecture on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**
8. **The Machine Learning Summer School in Okinawa 2024** **Okinawa, Japan**
March 13, 2024
Okinawa Institute of Science and Technology (OIST)
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]
7. **KAUST Rising Stars in AI Symposium 2024** **KAUST, Saudi Arabia**
February 21, 2024
KAUST
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]

2023 Talks and Poster Presentations.....

6. **Group Seminar** **KAUST, Saudi Arabia**
November 16, 2023
KAUST
Delivered a talk on **Differentially Private Coordinate Descent for Composite Empirical Risk Minimization**
5. **Algorithms & Computationally Intensive Inference seminars** **Coventry, England**
October 6, 2023
University of Warwick
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [slides]

4. **Mathematics in Armenia: Advances and Perspectives** **Yerevan, Armenia**
July 5, 2023
Yerevan State University
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[abstract](#)]
3. **Machine Learning Reading Group** **Yerevan, Armenia**
March 10, 2023
Yerevan State University
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[video \(Armenian\)](#)]

2022 Talks and Poster Presentations.....

2. **Federated Learning One World Seminar (FLOW)** **Online**
December 7, 2022
Online
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[video](#)]
1. **Machine Learning Reading Group** **Yerevan, Armenia**
April 10, 2022
Yerevan State University
Delivered a talk on **ProxSkip: Yes! Local Gradient Steps Provably Lead to Communication Acceleration! Finally!**

Hobbies

Ultimate Frisbee, Dancing (bachata, salsa), [Board Games](#), Table Football (Foosball)