

Artavazd Maranjyan

✉ arto.maranjyan@gmail.com • [artomaranjyan.github.io](https://github.com/artomaranjyan)

Education

- **Ph.D. in Computer Science** **Thuwal, Saudi Arabia**
2023 – 2025
King Abdullah University of Science and Technology (KAUST)
Advisor: Peter Richtárik
■ **Thesis:** First Provably Optimal Asynchronous SGD for Homogeneous and Heterogeneous Data
- **M.Sc. in Applied Statistics and Data Science** **Yerevan, Armenia**
2021 – 2023
Yerevan State University
■ **Thesis:** [On local training methods](#); **co-supervisors:** Peter Richtárik, Mher Safaryan
- **B.Sc. in Informatics and Applied Mathematics** **Yerevan, Armenia**
2017 – 2021
Yerevan State University
■ **Thesis:** [On the Convergence of Series in Classical Systems](#); **supervisor:** Martin Grigoryan

Academic Experiences

- **Research visit to Yi-Shuai Niu** **Beijing, China**
9-22 March 2025
Beijing Institute of Mathematical Sciences and Applications (BIMSA)
 - 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**
April 2023 – August 2023
Yerevan State University
 - 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**
March 2023 – August 2023
YerevaNN
 - Worked on the intersection of Federated Learning and Optimization
- **Internship in the group of Peter Richtárik** **Thuwal, Saudi Arabia**
June 2022 – January 2023
King Abdullah University of Science and Technology (KAUST)
 - Worked on the "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity" paper
- **Machine Learning Researcher** **Yerevan, Armenia**
January 2022 – June 2022
YerevaNN
 - Worked on the intersection of Federated Learning and Optimization

Industry Experiences

- **Co-Founder** **Yerevan, Armenia**
July 2021 – June 2022
[OnePick](#)
 - Built an MVP platform to help content creators and marketers generate or select photos that best matched their text descriptions
 - Participated in the [InVent 2.0](#) venture building program, advancing through team formation, idea generation, product development, and pitching
 - Secured initial funding and continued development beyond the program
- **Backend Developer** **Yerevan, Armenia**
July 2021 – September 2021
EXALT Technologies Ltd
 - Worked for Nutanix.
- **Machine Learning Research Engineer** **Yerevan, Armenia**
June 2021 – July 2021
Foundation for Armenian Science and Technology (FAST)
 - Worked on Fraud detection
 - Made data-driven forecasts using machine learning algorithms and statistical models

Software Engineer in Test

Yerevan, Armenia

September 2019 – January 2021

- *Picsart*
 - 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

CEMSE Dean's List Award

- *King Abdullah University of Science and Technology (KAUST)* May 2025
Awarded for excellent academic and research performance (\$2,500 prize)

Dean's Award

- *King Abdullah University of Science and Technology (KAUST)* September 2023
Awarded to a few top students accepted to KAUST (\$6,000 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

11. **Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity**
Artavazd Maranjyan, Peter Richtárik
Submitted to ICLR 2026
10. **BiCoLoR: Communication-Efficient Optimization with Bidirectional Compression and Local Training**
Laurent Condat, Artavazd Maranjyan, Peter Richtárik
Submitted to ICLR 2026
9. **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning**
Artavazd Maranjyan, El Mehdi Saad, Peter Richtárik, Francesco Orabona
ICML 2025: Forty-Second International Conference on Machine Learning
8. **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity**
Artavazd Maranjyan, Alexander Tyurin, Peter Richtárik
ICML 2025: Forty-Second International Conference on Machine Learning
7. **MindFlayer SGD: Efficient Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**
Artavazd Maranjyan, Omar Shaikh Omar, Peter Richtárik
UAI 2025: The 41st Conference on Uncertainty in Artificial Intelligence
OPT 2024: Optimization for Machine Learning (NeurIPS workshop)
Oral presentation (top 5% of 107 submissions)
6. **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity**
Artavazd Maranjyan, Mher Safaryan, Peter Richtárik
TMLR 2025: Transactions on Machine Learning Research
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. **Differentially Private Random Block Coordinate Descent**
Artavazd Maranjyan, Abdurakhmon Sadiev, Peter Richtárik
OPT 2024: Optimization for Machine Learning (NeurIPS workshop)

3. **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
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

- 2024–Now Transactions on Machine Learning Research (TMLR)
- 2026 International Conference on Learning Representations (ICLR)
- 2024 SIAM Journal on Mathematics of Data Science (SIMODS)
- 2024 The Journal of Machine Learning Research (JMLR)

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
 September 2023 - Dec 2023

Talks and Poster Presentations

2025 Talks and Poster Presentations

31. **AMCS/STAT graduate seminar** **KAUST, Saudi Arabia**
 KAUST November 13, 2025
 Delivered a talk titled **First Provably Optimal Asynchronous SGD for Homogeneous and Heterogeneous Data** [[slides](#)]
30. **The KAUST 2025 Workshop on Statistics** **KAUST, Saudi Arabia**
 KAUST November 4, 2025
 Presented posters on
 - **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[poster](#)]
 - **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning** [[poster](#)]
29. **Mathematics and Applications Colloquium** **KAUST, Saudi Arabia**
 KAUST October 28, 2025
 Delivered a talk on **Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity** [[slides](#)]
28. **35º Colóquio Brasileiro de Matemática** **Rio de Janeiro, Brazil**
 Instituto Nacional de Matemática Pura e Aplicada (IMPA) July 27-31, 2025
 Delivered a talk and a poster on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [[slides](#)] [[poster](#)]
27. **41st Conference on Uncertainty in Artificial Intelligence** **Rio de Janeiro, Brazil**
 Rio Othon Palace July 21-25, 2025
 Presented a poster on **MindFlayer SGD: Efficient Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** [[poster](#)]

26. **Forty-Second International Conference on Machine Learning** Vancouver, Canada
July 13-19, 2025
Vancouver Convention Center
Presented posters on
 - Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity [poster]
 - ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning [poster]
25. **Stochastic Numerics and Statistical Learning** KAUST, Saudi Arabia
May 18, 2025
KAUST
Presented a poster on ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning [poster]
24. **The Thirteenth International Conference on Learning Representations** Singapore
April 24-28, 2025
Singapore EXPO
Presented a poster on LoCoDL: Communication-Efficient Distributed Learning with Local Training and Compression (Spotlight presentation (top 5.1% of the submitted papers))
23. **Federated Learning One World Seminar (FLOW)** Online
April 16, 2025
FLOW Talk #126
Delivered a talk on Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity [video] [slides]
22. **KAUST Rising Stars in AI Symposium 2025** KAUST, Saudi Arabia
April 7-10, 2025
KAUST
Presented a poster on ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning [poster]
21. **Machine Learning Reading Group** Yerevan, Armenia
March 28, 2025
YSU Krisp-AI Lab
Delivered a talk on Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity [slides]
20. **Flower AI Summit 2025** London, England
March 26, 2025
King's House
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
March 17, 2025
Beihang University (BUAA)
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
March 13, 2025
Beijing Institute of Mathematical Sciences and Applications (BIMSA)
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
March 12, 2025
Peking University
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
February 27, 2025
KAUST
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
Machine Learning Research at Apple November 21, 2024
 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
Yerevan State University October 18, 2024
 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
KAUST October 10, 2024
 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
Yerevan State University July 6, 2024
 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
KAUST May 27, 2024
 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
KAUST May 5, 2024
 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
Okinawa Institute of Science and Technology (OIST) March 13, 2024
 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
KAUST February 21, 2024
 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
KAUST November 16, 2023
 Delivered a talk on **Differentially Private Coordinate Descent for Composite Empirical Risk Minimization**

5. **Algorithms & Computationally Intensive Inference seminars** Coventry, England
University of Warwick October 6, 2023
 Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[slides](#)]

4. **Mathematics in Armenia: Advances and Perspectives** Yerevan, Armenia
Yerevan State University July 5, 2023
 Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[abstract](#)]

3. **Machine Learning Reading Group** Yerevan, Armenia
Yerevan State University March 10, 2023
 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)**
FLOW Talk #88
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [[video](#)]

Online
December 7, 2022
1. **Machine Learning Reading Group**
Yerevan State University
Delivered a talk on **ProxSkip: Yes! Local Gradient Steps Provably Lead to Communication Acceleration! Finally!**

Yerevan, Armenia
April 10, 2022

Hobbies

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