

Artavazd Maranjyan

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Education

- **Ph.D. in Computer Science** **Thuwal, Saudi Arabia**
2023 – 2025
King Abdullah University of Science and Technology (KAUST)
Advisor: Peter Richtárik
- **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

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|---|---|
| 30. AMCS/STAT graduate seminar
KAUST
Delivered a talk on Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity | KAUST, Saudi Arabia
November 13, 2025 |
| 29. Mathematics and Applications Colloquium
KAUST
Delivered a talk on Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity | KAUST, Saudi Arabia
October 28, 2025 |
| 28. 35º Colóquio Brasileiro de Matemática
Instituto Nacional de Matemática Pura e Aplicada (IMPA)
Delivered a talk and a poster on Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity [slides] [poster] | Rio de Janeiro, Brazil
July 27-31, 2025 |
| 27. 41st Conference on Uncertainty in Artificial Intelligence
Rio Othon Palace
Presented a poster on MindFlayer SGD: Efficient Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times [poster] | Rio de Janeiro, Brazil
July 21-25, 2025 |
| 26. Forty-Second International Conference on Machine Learning
Vancouver Convention Center
Presented posters on <ul style="list-style-type: none"> ○ Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity [poster] ○ ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning [poster] | Vancouver, Canada
July 13-19, 2025 |
| 25. Stochastic Numerics and Statistical Learning
KAUST
Presented a poster on ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning [poster] | KAUST, Saudi Arabia
May 18, 2025 |

24. **The Thirteenth International Conference on Learning Representations**
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))
Singapore
April 24-28, 2025
23. **Federated Learning One World Seminar (FLOW)**
FLOW Talk #126
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [video] [slides]
Online
April 16, 2025
22. **KAUST Rising Stars in AI Symposium 2025**
KAUST
Presented a poster on **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning** [poster]
KAUST, Saudi Arabia
April 7-10, 2025
21. **Machine Learning Reading Group**
YSU Krisp-AI Lab
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]
Yerevan, Armenia
March 28, 2025
20. **Flower AI Summit 2025**
King's House
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]
London, England
March 26, 2025
19. **Academic Report of the School of Mathematical Sciences**
Beihang University (BUAA)
Invited by **Jiaxin Xie** to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]
Beijing, China
March 17, 2025
18. **Optimization Seminar**
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]
Beijing, China
March 13, 2025
17. **Seminar**
Peking University
Invited by **Kun Yuan** to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]
Beijing, China
March 12, 2025
16. **AMCS/STAT graduate seminar**
KAUST
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]
KAUST, Saudi Arabia
February 27, 2025

2024 Talks and Poster Presentations

15. **Workshop on Optimization for Machine Learning (NeurIPS 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**
Vancouver, Canada
December 15, 2024
14. **MLR Weekly Seminar**
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]
Online
November 21, 2024
13. **International Conference on Algebra, Logic, and their Applications**
Yerevan State University
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**
Online
October 18, 2024

12. **CEMSE E-Poster Competition**
KAUST
Awarded 3rd place for presenting a poster on
**GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity**
KAUST, Saudi Arabia
October 10, 2024
11. **Analysis, PDEs and Applications**
Yerevan State University
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD
in the Presence of Heterogeneous and Random Worker Compute Times** [abstract]
Yerevan, Armenia
July 6, 2024
10. **Stochastic Numerics and Statistical Learning**
KAUST
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [poster]
KAUST, Saudi Arabia
May 27, 2024
9. **CS 331: Stochastic Gradient Descent Methods**
KAUST
Delivered a guest lecture on **MindFlayer: Efficient Asynchronous Parallel SGD
in the Presence of Heterogeneous and Random Worker Compute Times**
KAUST, Saudi Arabia
May 5, 2024
8. **The Machine Learning Summer School in Okinawa 2024**
Okinawa Institute of Science and Technology (OIST)
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [poster]
Okinawa, Japan
March 13, 2024
7. **KAUST Rising Stars in AI Symposium 2024**
KAUST
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [poster]
KAUST, Saudi Arabia
February 21, 2024

2023 Talks and Poster Presentations

6. **Group Seminar**
KAUST
Delivered a talk on **Differentially Private Coordinate Descent
for Composite Empirical Risk Minimization**
KAUST, Saudi Arabia
November 16, 2023
5. **Algorithms & Computationally Intensive Inference seminars**
University of Warwick
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [slides]
Coventry, England
October 6, 2023
4. **Mathematics in Armenia: Advances and Perspectives**
Yerevan State University
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [abstract]
Yerevan, Armenia
July 5, 2023
3. **Machine Learning Reading Group**
Yerevan State University
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods
with Better Computational Complexity** [video (Armenian)]
Yerevan, Armenia
March 10, 2023

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)