Artavazd Maranjyan

✉ arto.maranjyan@gmail.com
🌐 artomaranjyan.github.io
Google Scholar   Linkedin

Future Position

03/2026	**Postdoctoral Researcher in the Group of Volkan Cevher**, *EPFL*, Lausanne, Switzerland

Education

2023–2025 **Ph.D. in Computer Science**, *KAUST*, Thuwal, Saudi Arabia; **Advisor:** Peter Richtárik
📄 **Thesis:** First Provably Optimal Asynchronous SGD for Homogeneous and Heterogeneous Data

2021–2023 **M.Sc. in Applied Statistics and Data Science**, *Yerevan State University*, Yerevan, Armenia
📄 **Thesis:** On local training methods; **Co-supervisors:** Peter Richtárik, Mher Safaryan

2017–2021 **B.Sc. in Informatics and Applied Mathematics**, *Yerevan State University*, Yerevan, Armenia
📄 **Thesis:** On the Convergence of Series in Classical Systems; **Supervisor:** Martin Grigoryan

Academic Experiences

03/2025 **Research Visit to Yi-Shuai Niu**, *BIMSA*, Beijing, China
- Gave talks at three universities (PKU, BUAA, BIMSA)
- Collaborated with Professor Yi-Shuai Niu on a project on Server-Assisted Federated Learning

04/23–08/23 **Researcher in the Group of Martin Grigoryan**, *Yerevan State University*, Yerevan, Armenia
- Studied the existence and properties of universal functions with respect to the Vilenkin and Haar systems across various functional spaces

06/22–01/23 **Internship in the Group of Peter Richtárik**, *KAUST*, Thuwal, Saudi Arabia
- Worked on the "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity" paper

01/22–08/23 **Machine Learning Researcher**, *YerevaNN*, Yerevan, Armenia
- Worked on the intersection of Federated Learning and Optimization

Industry Experiences

07/21–06/22 **Co-Founder**, *OnePick*, Yerevan, Armenia
- 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

07/21–09/21 **Backend Developer**, *EXALT Technologies Ltd*, Yerevan, Armenia
- Worked for Nutanix.

06/21–07/21 **Machine Learning Research Engineer**, *FAST*, Yerevan, Armenia
- Worked on Fraud detection
- Made data-driven forecasts using machine learning algorithms and statistical models

09/19–01/21 **Software Engineer in Test**, *Picsart*, Yerevan, Armenia
- 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

05/2025 **CEMSE Dean's List Award**, *KAUST*
Awarded for excellent academic and research performance ($2,500 prize)

09/2023	**Dean's Award**, *KAUST*
	Awarded to a few top students accepted to KAUST ($6,000 annually for 3 years)
05/2021	**Outstanding Final Project Award**, *Yerevan State University*
	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
arXiv:2509.22860, 2025

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

Reviewing

2024–Now	Transactions on Machine Learning Research (TMLR)
2025	International Conference on Learning Representations (ICLR)
2024	SIAM Journal on Mathematics of Data Science (SIMODS)
2024	The Journal of Machine Learning Research (JMLR)

Talks and Poster Presentations

13/11/2025 *AMCS/STAT Graduate Seminar*, *KAUST*, Thuwal, Saudi Arabia
Delivered a talk titled **First Provably Optimal Asynchronous SGD for Homogeneous and Heterogeneous Data** [slides]

04/11/2025 *The KAUST 2025 Workshop on Statistics*, *KAUST*, Thuwal, Saudi Arabia
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]

28/10/2025 *Mathematics and Applications Colloquium*, *KAUST*, Thuwal, Saudi Arabia
Delivered a talk on **Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity** [slides]

29/07/2025 *35º Colóquio Brasileiro de Matemática*, *IMPA*, Rio de Janeiro, Brazil
Delivered a talk and a poster on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides] [poster]

23/07/2025 *41st Conference on Uncertainty in Artificial Intelligence*, *Rio Othon Palace*, Rio de Janeiro, Brazil
Presented a poster on **MindFlayer SGD: Efficient Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** [poster]

16/07/2025 *Forty-Second International Conference on Machine Learning*, *Vancouver Convention Center*, Canada
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]

18/05/2025 *Stochastic Numerics and Statistical Learning*, *KAUST*, Thuwal, Saudi Arabia
Presented a poster on **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning** [poster]

26/04/2025 *The Thirteenth International Conference on Learning Representations*, *Singapore EXPO*, Singapore
Presented a poster on **LoCoDL: Communication-Efficient Distributed Learning with Local Training and Compression** (Spotlight presentation (top 5.1% of the submitted papers))

16/04/2025 *FLOW Talk #126*, *Federated Learning One World Seminar (FLOW)*, Online
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [video] [slides]

08/04/2025 *KAUST Rising Stars in AI Symposium 2025*, *KAUST*, Thuwal, Saudi Arabia
Presented a poster on **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning** [poster]

28/03/2025 *Machine Learning Reading Group*, *YSU Krisp-AI Lab*, Yerevan, Armenia
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

26/03/2025 *Flower AI Summit 2025*, *King's House*, London, England
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

17/03/2025 *Academic Report of the School of Mathematical Sciences*, *Beihang University (BUAA)*, Beijing, China
Invited by Jiaxin Xie to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

13/03/2025 *Optimization Seminar*, *BIMSA*, Beijing, China
Invited by Yi-Shuai Niu to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

12/03/2025 *Seminar*, *Peking University*, Beijing, China
Invited by Kun Yuan to give a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

27/02/2025 *AMCS/STAT Graduate Seminar*, *KAUST*, Thuwal, Saudi Arabia
Delivered a talk on **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [slides]

15/12/2024	**_Workshop on Optimization for Machine Learning (NeurIPS 2024)_**, _Vancouver Convention Center_, Vancouver, Canada

15/12/2024 **_Workshop on Optimization for Machine Learning (NeurIPS 2024)_**, _Vancouver Convention Center_, Vancouver, Canada
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**

21/11/2024 **MLR Weekly Seminar**, _Machine Learning Research at Apple_, Online
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]

18/10/2024 **_International Conference on Algebra, Logic, and their Applications_**, _Yerevan State University_, Online
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**

10/10/2024 **_CEMSE E-Poster Competition_**, _KAUST_, Thuwal, Saudi Arabia
Awarded 3rd place for presenting a poster on
GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity

06/07/2024 **_Analysis, PDEs and Applications_**, _Yerevan State University_, Yerevan, Armenia
Delivered a talk on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times** [abstract]

27/05/2024 **_Stochastic Numerics and Statistical Learning_**, _KAUST_, Thuwal, Saudi Arabia
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]

05/05/2024 **CS 331: Stochastic Gradient Descent Methods**, _KAUST_, Thuwal, Saudi Arabia
Delivered a guest lecture on **MindFlayer: Efficient Asynchronous Parallel SGD in the Presence of Heterogeneous and Random Worker Compute Times**

13/03/2024 **_The Machine Learning Summer School in Okinawa 2024_**, _OIST_, Okinawa, Japan
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]

21/02/2024 **_KAUST Rising Stars in AI Symposium 2024_**, _KAUST_, Thuwal, Saudi Arabia
Presented a poster on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [poster]

16/11/2023 **Group Seminar**, _KAUST_, Thuwal, Saudi Arabia
Delivered a talk on **Differentially Private Coordinate Descent for Composite Empirical Risk Minimization**

06/10/2023 **_Algorithms & Computationally Intensive Inference seminars_**, _University of Warwick_, Coventry, England
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [slides]

05/07/2023 **_Mathematics in Armenia: Advances and Perspectives_**, _Yerevan State University_, Yerevan, Armenia
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [abstract]

10/03/2023 **_Machine Learning Reading Group_**, _Yerevan State University_, Yerevan, Armenia
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [video (Yerevan, Armenia)]

07/12/2022 **_FLOW Talk #88_**, _Federated Learning One World Seminar (FLOW)_, Online
Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [video]

10/04/2022 **_Machine Learning Reading Group_**, _Yerevan State University_, Yerevan, Armenia
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)