

# Artavazd Maranjyan

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🌐 [artomaranjyan.github.io](https://artomaranjyan.github.io)

🔍 [Google Scholar](#) [LinkedIn](#)

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## Future Position

05/2026 **Postdoctoral Researcher in the Group of Volkan Cevher**, *EPFL*, Lausanne, Switzerland

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## 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

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## 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

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## 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 \(FAST\)](#) 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

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## 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  
*ICLR 2026: The Fourteenth International Conference on Learning Representations*
10. **BiCoLoR: Communication-Efficient Optimization with Bidirectional Compression and Local Training**  
Laurent Condat, Artavazd Maranjyan, Peter Richtárik  
*arXiv:2601.12400, 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)
- 2026 International Conference on Machine Learning (ICML)
- 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

- 09/02/2026 **KAUST Rising Stars in AI Symposium 2026**, KAUST, Thuwal, Saudi Arabia  
Presented posters on
- **Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity** [poster]
  - **Ringmaster ASGD: The First Asynchronous SGD with Optimal Time Complexity** [poster]
  - **ATA: Adaptive Task Allocation for Efficient Resource Management in Distributed Machine Learning** [poster]
- 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 **35<sup>o</sup> 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  
Presented
  - **MindFlyer: 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 **MindFlyer: 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 **MindFlyer: 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 **MindFlyer: 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 **MindFlyer: 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!**