# Artavazd Maranjyan

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## Education

**Ph.D. in Computer Science** **Thuwal, Saudi Arabia**
*King Abdullah University of Science and Technology (KAUST)* *2023 – 2025*
**Advisor:** Peter Richtárik
📄 **Thesis:** First Provably Optimal Asynchronous SGD for Homogeneous and Heterogeneous Data

**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

## Selected Industry and 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

**Internship in the group of Peter Richtárik** **Thuwal, Saudi Arabia**
*King Abdullah University of Science and Technology (KAUST)* *June 2022 – January 2023*
– Worked on the "GradSkip: Communication-Accelerated Local Gradient Methods
  with Better Computational Complexity" paper

**Co-Founder** **Yerevan, Armenia**
*OnePick* *July 2021 – June 2022*
– 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

**Software Engineer in Test** **Yerevan, Armenia**
*Picsart* *September 2019 – January 2021*
– 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)

## Selected Publications

5. Ringleader ASGD: The First Asynchronous SGD with Optimal Time Complexity under Data Heterogeneity
   Artavazd Maranjyan, Peter Richtárik
   *Submitted to ICLR 2026*

4. 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*

3. 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*

2. 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)

1. GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity
   Artavazd Maranjyan, Mher Safaryan, Peter Richtárik
   *TMLR 2025: Transactions on Machine Learning Research*

## Reviewing

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|---|---|
| 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) |

## Selected Talks

5. ***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]

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

3. **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]

2. ***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]

1. ***Federated Learning One World Seminar (FLOW)*** — **Online**
   *FLOW Talk #88* — *December 7, 2022*
   Delivered a talk on **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity** [video]

## Hobbies

Ultimate Frisbee, Dancing (bachata, salsa), Board Games, Foosball