

Artavazd Maranjyan

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Education

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

Experience

- **Researcher in the group of Martin Grigoryan** **Yerevan, Armenia**
Yerevan State University
April 2023 – Aug 2023
 - 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**
YerevaNN
March 2023 – Aug 2023
 - Worked on the intersection of Federated Learning and Optimization.
- **Internship in the group of Peter Richtárik** **Thuwal, Saudi Arabia**
King Abdullah University of Science and Technology (KAUST)
June 2022 – Jan 2023
 - Worked on the "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity" paper.
- **Machine Learning Researcher** **Yerevan, Armenia**
YerevaNN
Jan 2022 – June 2022
 - Worked on the intersection of Federated Learning and Optimization.
- **Co-Founder** **Yerevan, Armenia**
OnePick
July 2021 – June 2022

OnePick is an emerging startup that provides up-to-date and customized social media posts based on page and market data analysis.

 - Winner idea of InVent 2.0 [certificate] venture building program organized by FAST.
- **Backend Developer** **Yerevan, Armenia**
EXALT Technologies Ltd.
July 2021 – Sep 2021
 - Worked for Nutanix.
- **Machine Learning Research Engineer** **Yerevan, Armenia**
Foundation for Armenian Science and Technology (FAST)
June 2021 – July 2021
 - Worked on Fraud detection.
 - Made data-driven forecasts using machine learning algorithms and statistical models

Software Engineer in Test

Yerevan, Armenia

Sep 2019 – Jan 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

Dean's Award

Thuwal, Saudi Arabia

Sep 2023 - Sep 2026

○ *King Abdullah University of Science and Technology (KAUST)*

Awarded to a few top students accepted to KAUST (6000\$ annually for 3 years).

Outstanding Final Project Award

Yerevan, Armenia

○ *Yerevan State University*

May 2021

Recognized for the Bachelor's thesis (awarded to 6 students among 250+ students).

Papers

○ **LoCoDL: Communication-Efficient Distributed Learning with Local Training and Compression**

Laurent Condat, **Artavazd Maranjyan**, Peter Richtárik

arXiv:2403.04348, 2024.

○ **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.

○ **GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity**

Artavazd Maranjyan, Mher Safaryan, Peter Richtárik

arXiv:2210.16402, 2022

○ **On the divergence of Fourier series in the general Haar system**

Martin Grigoryan, **Artavazd Maranjyan**

Armenian Journal of Mathematics, vol. 13, p. 1–10, Sep. 2021.

○ **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.

Talks and Poster Presentations

○ "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity"

Poster presentations @ *KAUST Rising Stars in AI Symposium 2024*

KAUST, Thuwal, Saudi Arabia

February 21, 2024

○ "Differentially Private Coordinate Descent for Composite Empirical Risk Minimization"

Group Seminar

KAUST, Thuwal, Saudi Arabia

November 16, 2023

○ "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity"

Algorithms & Computationally Intensive Inference seminars [slides]

University of Warwick, Coventry, England

October 6, 2023

- "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity"
Mathematics in Armenia: Advances and Perspectives [slides] [abstract]
Yerevan, Armenia
July 5, 2023
- "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity"
Machine Learning Reading Group Yerevan [video (Armenian)]
Yerevan, Armenia
March 10, 2023
- "GradSkip: Communication-Accelerated Local Gradient Methods with Better Computational Complexity"
Federated Learning One World Seminar (FLOW) [video]
Online
December 7, 2022
- "ProxSkip: Yes! Local Gradient Steps Provably Lead to Communication Acceleration! Finally!"
Machine Learning Reading Group Yerevan
Yerevan, Armenia
April 10, 2022

Skills

- Algorithms and Data Structures [certificate],
- Python, Java, R,
- Numpy, Pandas, Matplotlib, Scikit-learn,
- PyTorch, Tensorflow,
- Languages
 - English: Proficient,
 - Russian: Proficient,
 - Armenian: Native

Hobbies

Dancing (bachata, salsa, kizomba), climbing, snorkeling, table football (foosball), board games.