

# Arash Ahmadian

✉ arash.ahmadian2001@gmail.com | arash-ahmadian | Arash Ahmadian

## EDUCATION

### University of Toronto

Bachelor of Applied Science | Program: Computer Engineering | Major GPA: 3.90

Toronto, ON, Canada

Sept. 2019 – Dec 2024

#### Reinforcement Learning Specialization

Relevant Courses: Introduction to Machine Learning, Introduction to Artificial Intelligence, Deep Learning, Probabilistic Learning & Reasoning, Trustworthy ML

## WORK & RESEARCH EXPERIENCE

### Google DeepMind

Mountain View, CA

Senior Research Scientist | Manager: Melvin Johnson

June 2025 - present

- Working on scalable RL & post-training recipes and delivering the post-training of released Gemini models as a part of the core post-training

### Cohere

San Francisco, CA

Senior Member of Technical Staff | Supervisor: Sara Hooker

Sept. 2024 - June 2025

- Research topics: Reinforcement Learning (RL), Preference Training, Model Merging, Multi-modal Post-training
- Model Training: was a technical lead for RL, preference training, and model merging (lead from inception) in multiple model releases including **Command A** and **Command-R-7B**, in addition to the **Aya Expanse** and **Aya Vision** model series.

Member of Technical Staff | Supervisors: Olivier Pietquin & Sara Hooker

Jan 2024 - August 2024

- Research topics: RL, Preference Training
- Model Training: was one of three staff responsible for the post-training of **Command R / R+** (placed 6th on LLMSys at the time of release)

Research Scholar | Supervisors: Ahmet Üstün & Sara Hooker

Jan 2023 - Dec 2023

- Research topics: Efficiency at Scale, Mixture of Experts

### Vector Institute for AI

Toronto, ON, Canada

Researcher | Supervisor: Amir-massoud Farahmand

Feb. 2023 – May 2023

- Research topics: Model-based Reinforcement Learning, Continuous Control

### University of Toronto

Toronto, ON, Canada

Undergraduate Researcher | Supervisor: Kostas Plataniotis

Feb. 2022 – Dec. 2022

- Research topics: Optimization, Vision Transformers, Neural Architecture Search

Undergraduate Researcher | Supervisor: Vaughn Betz

May 2021 - Feb. 2022

- Research topics: Discrete Optimization, RL, FPGA Placement & Routing

### Cerebras Systems

Toronto, ON, Canada

Machine Learning Research Intern

May 2022 – Dec 2022

- Improving hardware utilization and training efficiency of large transformer based models

## FEATURED PUBLICATIONS

- [1] **Arash Ahmadian**, Chris Cremer, Matthias Gallé, Marzieh Fadaee, Julia Kreutzer, Olivier Pietquin, Ahmet Üstün, Sara Hooker "Back to basics: Revisiting REINFORCE style optimization for learning from human feedback in llms", Association for Computational Linguistics [ACL], 2024
- [2] **Arash Ahmadian\***, Saurabh Dash\*, Hongyu Chen\*, Bharat Venkitesh, Stephen Gou, Phil Blunsom, Ahmet Üstün, Sara Hooker "Intriguing Properties of Quantization at Scale", Neural Information Processing Systems [NeurIPs], 2023
- [3] John Dang\*, Shivalika Singh\*, Daniel D'souza\*, **Arash Ahmadian\***, et. al, "Aya expanse: Combining research breakthroughs for a new multilingual frontier"

- [4] Eugene Choi\*, **Arash Ahmadian\***, Matthieu Geist, Oivlier Pietquin, Mohammad Gheshlaghi Azar, Self-improving robust preference optimization, The International Conference on Learning Representations [**ICLR**], 2025
- [5] Ted Zadouri, Ahmet Üstün, **Arash Ahmadian**, Beyza Ermiş, Acyr Locatelli, Sara Hooker, Pushing mixture of experts to the limit: Extremely parameter efficient moe for instruction tuning, The International Conference on Learning Representations [**ICLR**], 2024
- [6] John Dang, **Arash Ahmadian**, Kelly Marchisio, Julia Kreutzer, Ahmet Üstün, Sara Hooker, Rlhf can speak many languages: Unlocking multilingual preference optimization for llms, Conference on Empirical Methods in Natural Language Processing [**EMNLP**] (Oral), 2024

## AWARDS

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Academic In-course Scholarship(s) [valued at \$17000 CAD]	Sept. 2021 - May 2022
Academic In-course Scholarship(s) [valued at \$5000 CAD]	Sept. 2020 - May 2021
Google Summer of Code	May 2021 - Aug. 2021
Natural Sciences & Engineering Research Council of Canada Research Award	May 2020 - Aug. 2020

## TECHNICAL SKILLS & LIBRARIES

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Python, PyTorch, Jax, Tensorflow, HuggingFace, C++, C, Assembly