

MARAWAN GAMAL

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EDUCATION

Mila / University of Montreal

PhD. Computer Science **GPA: 4.0**

2022 - Present

University of Waterloo

MASc. Vision, Image and Signal Processing. **GPA: 4.0 (94%)**

2022

University of Toronto

BASc. Mechatronics and Robotics Engineering. Minor in Artificial Intelligence. GPA: 3.72 (3rd&4th year)

2020

PUBLICATIONS

- **M. Gamal Abdel Hameed**, D. Tam, P. J. Tikeng Notsawo, C. Raffel, and G. Rabusseau. "Model Merging via Data-Free Covariance Estimation." In *Proceedings of the Conference on Language Modeling (COLM)*, 2026.
- **M. Gamal Abdel Hameed**, D. Tam, P. J. Tikeng Notsawo, C. Raffel, and G. Rabusseau. "Merging Adapted Models via Data-Free Covariance Estimation." In *ICML Workshop on Continual Adaptation at Scale*, 2026. (Oral presentation).
- M. Lizaie, M. Rzvi-Martel, **M. Gamal Abdel Hameed**, and G. Rabusseau. "A Tensor Decomposition Perspective on Second-Order RNNs." In *Proceedings of the International Conference on Machine Learning (ICML)*, 2024. (Spotlight presentation).
- **M. Gamal Abdel Hameed**, A. Milios, S. Reddy, and G. Rabusseau. "ROSA: Random Subspace Adaptation for Efficient Fine-Tuning." In *ICML Workshop on Efficient Systems for Foundation Models*, 2023.
- A. Edalati, **M. Gamal Abdel Hameed**, and A. Mosleh. "Generalized Kronecker-Based Adapters for Parameter-Efficient Fine-Tuning of Vision Transformers." In *Proceedings of the Canadian Conference on Computer and Robot Vision (CRV)*, 2023.
- **M. Gamal Abdel Hameed**, M. S. Tahaei, A. Mosleh, and V. Partovi Nia. "Convolutional Neural Network Compression through Generalized Kronecker Product Decomposition." In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2022.
- **M. Gamal Abdel Hameed**, M. S. Tahaei, A. Mosleh, and V. Partovi Nia. "SeKron: A Decomposition Method Supporting Many Factorization Structures." *arXiv preprint arXiv:2210.06299*, 2022.

EXPERIENCE

Teaching Assistant @ IFT6390B - Fundamentals of Machine Learning

September. 2025 – Present

- Ran weekly tutorials reviewing lecture material and assisting students with assignments

Scientist in Residence @ Next AI

January. 2024 – August 2024

- Aided in developing a Retrieval Augmented Generation pipeline

Machine Learning Researcher @ Huwaei

May. 2021 – Dec 2022

- First author publication "*Convolutional Neural Network Compression through Generalized Kronecker Product Decomposition*" achieved during first four months of internship.
- Developed theoretical framework (SeKron), generalizing all previous well known decomposition methods (Tensor-Train, Tucker, Tensor-Ring, CP). Awarded Huawei North American Pioneer Award.

Creator & ML Engineer @ Dekki (www.dekki.ai)

May. 2023 – December 2024

- Developed a novel ML model to model human memory via Ebbinghaus curves. This was a side project for around a year and a half during my PhD that gained traction in the medical community (**45K users**.)

Computer Vision Researcher @ Vision and Image Processing Lab

Sep. 2020 – Aug. 2022

- Developed an action recognition model with improved temporal modeling capability, based on the I3D architecture
- Developed a data collection tool for action recognition and facilitated its deployment with our industry partner

Data Engineer (Co-op) @ Mother Parkers Tea & Coffee

May 2017 – July 2018

- Developed predictive model for a coffee manufacturing process to estimate expected waste.

GRADUATE COURSES & PROGRAMMING SKILLS

- **Graduate Courses:** Tensor Networks, Measure Theory (Aud), Deep Learning, Pattern Recognition, Statistical Image Processing, Numerical Linear Algebra, Reinforcement Learning.
- **Programming:** Python, PyTorch, C/C++, SQL

AWARDS & ACHIEVEMENTS

- **ICML Workshop on Continual Adaptation at Scale** Oral presentation
- **Waterloo Artificial Intelligence Institute Graduate Scholarship** Awarded to one MASc student for demonstrated expertise in artificial intelligence.
- **University of Toronto Dean's Honour List.** For exceptional academic achievement.
- **Student Innovation Fellowship, University of Toronto Faculty of Medicine** For technical contribution in prototyping hand hygiene technology (medicine.utoronto.ca/news/washing-away-health-care-acquired-infections)