# Marawan Gamal

marawangamal.github.io | youtube.com/@stochastix (1 video, **100K views**)

## 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 ($3^{rd}$&$4^{th}$ year)* *2020*

## Publications

- Maude Lizaire, Michael Rzvi-Martel, **M. Gamal Abdel Hameed** and G. Rabusseau., In Proceedings of ICML 2024, A Tensor Decomposition Perspective on Second-order RNNs
- **M. Gamal Abdel Hameed**, Aristides Milios, Siva Reddy and G. Rabusseau. ROSA: Random Subspace Adaptation for Efficient Fine-Tuning. In Proceedings of ICML 2023 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 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 AAAI, 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

**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*
- Fist 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). Received the 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 that had **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

- **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 protoyping hand hygiene technology (medicine.utoronto.ca/news/washing-away-health-care-acquired-infections)