

NIMA FATHI

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HIGHLIGHTS

- **4+ years** of academic and industrial expertise in developing large-scale **deep learning re-search infrastructure**, with a focus on areas such as *Large Language Modeling*, *Generative AI*, and *Computer Vision*.
- **2+ years** of work experience as **Software Engineer**, and **Data Scientist**.
- **AGI Believer**: Inspired by Turing's vision that "we can only see a short distance ahead, but we can see plenty there that needs to be done," committed to advancing AGI through Language Models.

SELECTED EXPERIENCES

ServiceNow ♦ **Visiting Researcher** *Montréal, QC* ♦ Jul. 2024 – Present
• Focus: Multimodal Foundation Models, and Semi-Autoregressive LLMs with Discrete Diffusion Models.
• Supervised by **Pierre-André Noël**.

Mila - Quebec AI Institute ♦ **MSc Student** *Montréal, QC* ♦ Sep. 2022 – Present
• Advised by **Tal Arbel** at McGill University.
• Research Areas: Counterfactual Generation, Responsible AI and Generative AI.

McGill University ♦ **Teaching Assistant** *Montréal, QC* ♦ Sep. 2022 – present
• **ECSE 626** – Statistical Computer Vision, by **Tal Arbel**; Head TA, responsible for planning, and a guest speaker for multiple keynotes.
• **ESCE 415** – Introduction to Computer Vision, by **James J. Clark**, Head TA.
• **COMP 551** – Applied Machine Learning by Reihaneh Rabbany.
• **COMP 424** – Artificial Intelligence, by **David Meger** and **Golnoosh Farnadi**.

EPFL ♦ **Research Assistant** *Lausanne, Switzerland* ♦ Jul. 2021 – May 2022
• Supervised by **Alex Alahi**.
• Software Development: Lead developer for a PyTorch-based toolbox for pose prediction, Posepred. Unofficial Demo [here](#).

CafeBazaar Inc. - Divar ♦ **Senior SWE** *Tehran, Iran* ♦ Jan. 2021 – Jul. 2021
• Worked at **Divar**, the biggest Persian classified ads and E-commerce mobile app, and an online platform for users in Iran.
• Full stack developer for the chat team, responsible for online chat and call services. Developed an AI model for detecting harassment and scams.

Yektanet Inc. ♦ **Backend Developer (TL), Data Scientist** *Tehran, Iran* ♦ May – Dec. 2020
• Yektanet is the biggest Iranian advertising network that caters to native advertising, offering targeted advertising and analytics with 12 billion monthly impressions.
• Led a Team of 5 team as Technical Leader, focusing on infrastructure and core systems.
• Contributed to content-based recommender systems and led the User Location Estimator (ULE), project.

Sharif University of Technology ♦ **Research Assistant, TA** *Tehran, Iran* ♦ Sept 2017 – Dec. 2021
• Research Assistant, supervised by **MohammadHossein Rohban**; Focus: Vision Transformer, CXR imaging.
• Teaching Assistant for **40-324** – Modern Information Retrieval, by **Hamid Beigy**.
• Teaching Assistant for **40-417** – Artificial Intelligence, by **MohammadHossein Rohban**, Head TA.
• Teaching Assistant for **40-494** – Introduction to Bioinformatics, by **Ali Sharifi Zarchi**

PUBLICATIONS

♦ DeLTa - ICLR'25 **Unifying Autoregressive and Diffusion-Based Sequence Generation**

Nima Fathi, Torsten Scholak, Pierre-Andre Noel

♦ MIDL'24 **Confounder Detector Guidance for Improved Diffusion-based Counterfactual Explanations**

Nima Fathi, Amar Kumar*, Brennan Nichyporuk, Mohammad Havaei, Tal Arbel*

ORAL Shortlisted for Best Paper Award [Top 3.6%]

♦ FAIMI - MICCAI'23 **Debiasing Counterfactuals In the Presence of Spurious Correlations**

Amar Kumar, Nima Fathi, Raghav Mehta, Brennan Nichyporuk, Jean-Pierre R Falet, Sotirios Tsaftaris, Tal Arbel

♦ SoMoF - ICCV'21 **Towards human pose prediction using the encoder-decoder Istm**

Nima Fathi, Armin Saadat*, Saeed Saadatanejad, Alexandre Alahi*

♦ ArXiv **SwinCheX: Multi-label classification on chest X-ray images with transformers**

Sina Taslimi, Soroush Taslimi*, Nima Fathi, Mohammadreza Salehi, Mohammad Hossein Rohban*

EDUCATION

M.Sc. in Electrical and Computer Engineering
Sep'21 – May'25
McGill University & Mila *GPA: 4.0 / 4.0*

B.Sc. in Computer Engineering Sep'17 – Dec'21
Sharif University of Technology *GPA: 3.85 / 4.0*

TECHNOLOGIES

Frameworks and Codebases

- Working Experience: JAX, PyTorch, TensorFlow
- General Skills: OpenCV2, OpenCV2, OpenAIGym, Numpy
- Hugging Face: Transformers, Diffusers, PEFT, Accelerate
- Data/Pipeline/Tensor Parallelism: DeepSpeed, Megatron-LM, FlashAttention

Programming Languages

- Working Experience: Python, GO, Elixir
- General Skills: C/C++, Java, R, Matlab
- Data management and Database: PostgreSQL, RocksDB, MongoDB, Redis, Cassandra, SQLite, Elasticsearch
- Web Development: Django, Flask, HTML/CSS/Bootstrap, React Native

Miscellaneous

- 10+ years experience with Linux systems
- kubernetes, Docker, MinIO, Git, and L^AT_EX
- 🇬🇧 English, Farsi

HONORS & AWARDS

Graduate Excellence Fellowship (GEF) **[McGill]**

McGill Engineering Doctoral Award (MEDA) **[McGill]**

Google's Institutional Research Program (IRP) **[Mila/Google Brain]**

MSc Tuition Differential Fee Waiver (DFW) **[McGill]**

Fully Funded Admission to **Mila/McGill**, **UBC**, **UWaterloo**, **SFU**

RESEARCH INTERESTS

- Generative AI
- Large Language Modeling
- Counterfactual Generation
- Representation Learning
- Motion Forecasting