

NIMA FATHI

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HIGHLIGHTS

- **4+ years** of academic and industrial expertise in developing large-scale **deep learning research 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**.

SELECTED EXPERIENCES

ServiceNow ◊ **Visiting Researcher** Montréal, QC ◊ Jul. 2024 – Present

- Focus: – Multimodal Foundation Models, and Semi-Autoregressive LLMs using 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** Remotely From Tehran ◊ 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 Iranian 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 5-person team as Technical Leader, focusing on infrastructure and core systems.
- Contributed to content-based recommender systems and led the (ULE), User Location Estimator, project.

SUT^a ◊ **Research Assistant, TA** Tehran, Iran ◊ Sept 2017 – Dec. 2021

- Research Assistant, supervised by **MohammadHossein Rohban**; Focus: Vision Transformer, CXR imaging.
- Teaching Assistant for **40324** – 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

◊ MIDL'24 **DeCoDEX: 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%]

◊ MICCAI'23 **Debiasing Counterfactuals In the Presence of Spurious Correlations**

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

◊ ICCV Workshops'21 **Towards human pose prediction using the encoder-decoder lstm**

*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 – Present

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, OpenAI Gym, 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
- Docker, kubernetes, MinIO, Git, and L^AT_EX
- 🇬🇧 English, Farsi

HONORS & AWARDS

Graduate Excellence Fellowship (GEF)

MSc Tuition Differential Fee Waivers (DFWs)

Fully Funded Admission to **Mila/McGill**,

UWaterloo, UBC, SFU

RESEARCH INTERESTS

- Generative AI
- Large Language Modeling
- Counterfactual Generation
- Representation Learning
- Motion Forecasting (trajectory and pose)

¹ I strongly believe in the one-page resume. Full experience summary is available in LinkedIn (might be out of date)

^a Also known as Sharif University of Technology