

# Nima Fathi

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🌐 [Personal GitHub](#) | 🌐 [Personal Website](#) | [LinkedIn](#)

## Highlights

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- **6+ years** of experience in deep learning research and engineering across *LLMs, Generative AI, and Medical Imaging*.
- **First-author at ICLR, COLM, MIDL, MICCAI** on topics including Diffusion Language Models, Counterfactual Generation, and Vision-Language Reasoning.
- **2+ years of industry experience**, delivering scalable ML systems; led infra teams and built recommender/chat/voice products.
- **Motivated by AGI**: I'm driven by the pursuit of scalable, general-purpose intelligence — inspired by Turing's vision: "We can only see a short distance ahead, but we can see plenty there that needs to be done."

## Education

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- **McGill University** — *M.Sc. in Electrical and Computer Engineering*    *Montreal, Canada* — *Sept. 2022 – Aug. 2025 (Expected)*
  - Student Researcher at Mila - Quebec AI Institute. **GPA: 4.0/4.0**
- **Sharif University of Technology** — *B.Sc. in Computer Engineering*    *Tehran, Iran* — *Sept. 2017 – Dec. 2021*
  - **GPA: 3.85/4.0 (18.12/20.0)**

## Research Experience

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- **ServiceNow Research** — *Visiting Researcher*    *Montreal, Canada* — *Jul. 2024 – Mar. 2025*
  - Built one of the first diffusion-based language models (DLMs).
  - Proposed a framework unifying LLMs and DLMs for efficient generation.
- **Mila - Quebec AI Institute** — *MSc Researcher (Advisor: Prof. Tal Arbel)*    *Montreal, Canada* — *Sept. 2022 – Present*

Working on foundational research at the intersection of generative modeling and medical imaging.

  - Multi-agent systems for counterfactual generation and visual explainability. (submitted work @ iccv workshops)
  - Diffusion and GAN-based approaches for counterfactual image synthesis. (ORAL@ MIDL'24 and short-listed for Best Paper Award)
  - Bias mitigation for improving robustness and generalization in medical imaging. (Published work @ MICCAI)
  - Longitudinal generative modeling and trajectory forecasting for irregularly sampled time series.
- **EPFL** — *Research Intern (Prof. Alexandre Alahi)*    *Remote* — *Jul. 2021 – May. 2022*
  - Principal developer of **UnPOSeD**, an open-source **toolbox** for **forecasting** a sequence of human poses. Contributed to:
    - \* Software engineering best practices, modular design, and reproducible experimentation.
    - \* Developing and scaling the most recent open-source and closed-source published models in the realm of trajectory and pose prediction.
- **Sharif University of Technology** — *Research Assistant (Prof. Rohban)*    *Tehran, Iran* — *Dec. 2020 – Sept. 2021*
  - Co-authored one of the earliest works applying Vision Transformers to medical imaging, establishing a benchmark for subsequent research.

## Industry Experience

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- **Divar (Cafe Bazaar Inc.)** — *Software Engineer* *Tehran, Iran — Jan. 2021 – Jul. 2021*
  - Divar is the biggest Persian classified ads and E-commerce mobile app.
  - *Chat Team*:
    - \* Improved in-app messaging and VoIP call functionality, boosting user engagement by over 40%.
    - \* Maintained system ownership across CI/CD, code reviews, and production monitoring.
    - \* Built moderation tools using ML to detect harassment and scams.
- **Yektanet Inc.** — *Machine Learning Engineer* *Tehran, Iran — May 2020 – Dec. 2020*

Started as a data scientist in the Data team and was quickly promoted to a machine learning engineer for the Infrastructure team.

  - *Infrastructure team*:
    - \* Developed a real-time data pipeline for ad serving, improving latency by 30%.
    - \* Implemented a distributed system for large-scale data processing, enhancing scalability.
    - \* Owned and maintained backend and database services for internal tooling.
  - *Data team*:
    - \* Built content-based recommenders for ads and personalization.
    - \* Designed a geolocation system increasing CTR by 6.1%.

## Selected Publications (For a complete list, please see my [Google Scholar](#) profile)

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- **COLM'25 & ICLR'25 Workshops (DelTa)**: *Unifying Autoregressive and Diffusion-Based Sequence Generation*  
[Nima Fathi](#), Torsten Scholak, Pierre-Andre Noel
- **MICCAI'25 (ORAL)**: *AURA: A Multi-Modal Medical Agent for Understanding, Reasoning & Annotation*  
[Nima Fathi](#), Amar Kumar, Tal Arbel
- **MIDL'24 (Oral, Best Paper Finalist)**: *DeCoDEX: Confounder Detector Guidance for Improved Diffusion-based Counterfactual Explanations*  
[Nima Fathi\\*](#), Amar Kumar\*, et al.
- **MICCAI'23 - FAIMI**: *Debiasing Counterfactuals In the Presence of Spurious Correlations*  
A. Kumar, [Nima Fathi](#), et al.

## Honors & Awards

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- Graduate Excellence Fellowship (GEF) and McGill Engineering Doctoral Award (MEDA) [**McGill**]
- Google Institutional Research Program [**Mila/Google Brain**], Tuition Differential Waiver (DFW) [**McGill**]
- Fully Funded Admission: **Mila/McGill**, UBC, UWaterloo, SFU.
- Ranked Top 0.1% in Iranian National University Entrance Exam

## Skills

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- **Frameworks**: PyTorch, JAX, TensorFlow, Transformers, Diffusers, PEFT, Accelerate
- **Infra/Parallelism**: DeepSpeed, Megatron-LM, FlashAttention
- **Agentic AI**: LangGraph, LangChain, LlamaIndex, smolagents, Haystack, RAG, VectorDB
- **Languages**: Python, GO, Elixir, C/C++, Java, MATLAB, R
- **Databases**: PostgreSQL, MongoDB, RocksDB, Redis, Elasticsearch
- **Web**: Django, Flask, HTML/CSS/Bootstrap, React Native

## Research Interests

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- Agentic AI, Multi-agent Reasoning, Inference-time Algorithms
- Diffusion Language Models, LLM Alignment, Vision-Language Models
- Counterfactual Explanations, Fairness & Robustness in Medical Imaging