Mehrab Hamidi

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EDUCATION

UNIVERSITÉ DE MONTRÉAL
PhD in Computer Science
Since 2024
With Ioannis Miliagkas and Aristide Baratin

MCGILL UNIVERSITY
Ms.c. in Computer Science
2022-2024

SHARIF UNIVERSITY OF TECHNOLOGY
B.Sc. in Computer Science
2017-2022
Minor in Mathematics
2019-2022

INTERESTS

Deep Learning Theory
Generalization Theory of Deep Learning
Interpretability & Safety
Feature Learning
Second-order Optimization

COURSEWORK

GRADUATE
Theory of Deep Learning
Probabilistic Graphical Models
Bayesian Method in Statistics and Learning

TEACHING ASSISTANT
Mathematical Tools for CS
Statistical Machine Learning

SKILLS

PROGRAMMING
Java • C++ • Swift • Matlab
Jax • Python • R • LaTeX
FRAMEWORKS
Pytorch • Numpy • JAX

HONORS

Awarded Inter-Math-AI Scholarship IMA 2024
Ranked 130 among one hundred thousand student attendance in university entrance exam (Konkour) 2017

PUBLICATIONS

NAVIGATING POTHOLES WITH GEOMETRY-AWARE SHARPNESS MINIMIZATION Under Submission

BRIDGING THE NEURAL DIVIDE: GEOMETRICAL INSIGHTS AND PRACTICAL APPROACHES TO MACHINE LEARNING INTERPRETABILITY Master thesis

T-GRAB: A SYNTHETIC DIAGNOSTIC BENCHMARK FOR LEARNING ON TEMPORAL GRAPHS KDD 2026 Datasets and Benchmarks Track - Oral Presentation

INTERPRETABILITY IN ACTION: EXPLORATORY ANALYSIS OF VPT, A MINECRAFT AGENT | ICML2024 MI workshop

PREDICTING SURVIVAL OF IRANIAN COVID-19 PATIENTS INFECTED BY VARIOUS VARIANTS INCLUDING OMICRON FROM CT SCAN IMAGES AND CLINICAL DATA USING DEEP NEURAL NETWORKS | Elsevier, Heliyon 2023

SOMATIC POINT MUTATIONS ARE ENRICHED IN NON-CODING RNAS WITH POSSIBLE REGULATORY FUNCTION IN BREAST CANCER | Nature Communications Biology 2022

UNDER PUBLICATION

SPAGHETTIFICATION: DIMENSION COLLAPSE AND SPARSITY IN RELU NETWORKS | 2026

ADVERSARIAL DATA POISONING AND BILEVEL OPTIMIZATION | ADVML course project 2025

PROFESSIONAL EXPERIENCES

RA INTERN | 2021 | Mcgill
Variational likelihood-free methods for causal discovery in biological data.

MACHINE LEARNING ENGINNER | 2020-2021 | AIMED, Iran
Deep learning for medical imaging, particularly respiratory disease detection from CT-scans.

MACHINE LEARNING ENGINEER | 2019-2020 | Fanap, Iran
Developed and deployed deep learning methods for Farsi Automatic Speech Recognition (ASR).

VOLUNTARILY SERVICES

MILA LAB REPRESENTATIVE Two times in a row, cohort 2025-2026 and 2024-2025