Maryam Haghifam

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maryamhgf

Education

◇ **PhD in Computer Science** — Sep. 2021– Present
University of Toronto — **GPA: 3.75/4**

◇ **BSc in Electrical Engineering** — Sep. 2016– Jun. 2021
University of Tehran — **GPA: 17.68/20**
(GPA of 7^{th} semester: 18.95/20, 8^{th} semester: 19.51/20)

◇ **Minor in Computer Engineering** — Sep. 2019 – Jun. 2021
University of Tehran — **GPA: 17.18/20**
(GPA of 1^{th} and 2^{th} semesters: 19.83/20)

Technical Skills

◇ **Programming**: C/C++, Python, R, CUDA, SQL, PyTorch, TensorFlow, Matlab

◇ **Engineering Software & Platforms**: Psychtoolbox, CodeVisionAVR.

◇ **Operating systems**: Linux, Windows.

Research Experience

◇ **PhD Research Project** — In progress
University of Toronto, Toronto, Canada
Supervisor: Prof. Gennady Pekhimenko and Prof. Nandita Vijaykumar

· Working on analysing the performance of the machine learning model with preserving the privacy of its structure.

◇ **PhD Research Project** — Fall 2021 & Winter 2022
University of Toronto, Toronto, Canada
Supervisor: Prof. Maryam Mehri-Dehnavi.

· Working on latent ordinary differential equations (ODEs) for multi-scale time-series prediction.

· Working on hierarchical deep generative models.

· Working on higher-order optimization for neural ordinary differential equations using optimal control theory.

◇ **Research Internship** — Fall 2020
University of Toronto, Toronto, Canada
Supervisor: Prof. Yashar Ganjali.

· A study on the impact of the correlation between flows for resource provisioning.

◇ **Undergraduate Thesis** — Summer & Fall 2020
University of Tehran, Tehran, Iran
Supervisor: Prof. Vahid Shah-Mansouri.

· A study on the prediction of network traffic patterns comparing two prediction methods: reinforcement learning and time series (ARIMA & ARMA).

◇ **Research Internship** Summer 2019
University of Toronto, Toronto, Canada
Supervisor: Prof. Shahrokh Valaee.

· A study on the impact of dropout methods for training deep neural networks using TensorFlow.

◇ **Research Internship** Spring 2019
University of Tehran, Tehran, Iran
Supervisor: Prof. Vahid Shah-Mansouri

· Researched on different methods for crowd-sourcing.

· Implemented and compared the performance of the confidence-based and answer-based crowd-sourcing methods.

· This research is **under submission**.

Honors and Awards

◇ **Ranked among the top 15% in the electrical engineering major** out of 120 undergraduate students, Electrical and Computer Engineering, University of Tehran.

◇ **Ranked in the top 0.3%** in Iran's Nationwide University Entrance Exam for Engineering and Applied Sciences. Summer 2016.

Relevant Courseswork

◇ **University of Toronto**

· CSC2321 (Matrix Calculations), Spring 2021.

· CSC2516 (Neural Networks and Deep Learning), A+, Spring 2021.

· CSC2504 (Computer Graphics), A+, Fall 2021.

· CSC2222 (Applications in Parallel Programming), A, Fall 2021.

◇ **University of Tehran**

· Design and Analysis of Algorithms, Artificial Intelligence, Advanced Programming, Linear Algebra, Statistical Inference, Engineering Probability and Statistics

Selected Projects

◇ **Efficient Random Attention Methods** (CSC2516-Neural Networks and Deep Learning project)

· Used random permutation for sampling to speedup the training process.

· Compared full versus random attention mechanisms.

◇ **Distributed Training for Neural ODE** (CSC2222-Matrix Calculations project)

· Designed a distributed training algorithm for training ODEs for classification tasks.

· Implemented data-based and model-based algorithms for distributed training.

◇ **Reproducing the results of the "Interactive Differentiable Simulation" (IDS) paper** (CSC2504-Computer Graphics project)

· IDS is a differentiable physics engine, that allows for efficient, accurate inference of physical properties of rigid-body systems.

◇ **Research Intern**
University of Tehran, Tehran, Iran
Supervisor: Prof. Vahid Shah-Mansouri.

· Implemented and compared the performance of the confidence-based and answer-based crowd-sourcing methods.