

Amir
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University of Illinois
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Amir E.P.Moghaddam

Computer Science and Engineering

Education

Sep. 2023 University of Illinois Chicago

- Ph.D., Computer Science. GPA: 4/4

Sep. 2017 - Feb. 2022, K. N. Toosi University of Technology, Tehran, Iran

- B.Sc., Computer Engineering.
- Thesis: Windshield Reflection Removal under the supervision of Dr. Behrooz Nasihatkon.

Ph.D. Research

Generative Models
Multi-Modal Models
Spiking Neural Networks
New Training Mechanisms (Forward Forward)

Research Interests

Machine Learning
Computer Vision and NLP
Signal and Image Processing

Honors and Rewards

Ranked 180th among more than 50,000 applicants in the nationwide university entrance, 2017

Research Experience

Motion planning using Reinforcement Learning for self-driving cars. Research internship under the supervision of Prof. Dr. Matthias Althoff at the Technical University Of Munich. (JUL-SEP 2021)

Teaching Experience

Spring 2024, **TA and grader for CS 141 Program Design II by Dr. Pedram Rooshenas**

Fall 2020, **TA and grader for Signal And Systems by Dr. Fatemeh Rezaei**

Fall 2019, **TA and grader for Hardware Software Co-design by Dr. H. Roodaki**

Selected Courses and Certificates

Fall 2023, **UIC CS 412, Introduction to Machine Learning by Prof. Pedram Rooshenas**

Summer 2020, **MIT RES.6-012, Introduction to Probability by Prof. John Tsitsiklis**

Summer 2020, **MIT 18.06, Linear Algebra by Prof. Gilbert Strang**

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Spring 2020, [Stanford CS231n, Convolutional Neural Networks for Visual Recognition](#) by Prof. Fei-Fei Li

Spring 2020, [Neural Networks and Deep Learning](#) by Prof. Andrew Ng

Spring 2020, [Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization](#) by Prof. Andrew Ng

Spring 2020, [Structuring Machine Learning Projects](#) by Prof. Andrew Ng

Fall 2019, [MIT 6.003, signals and systems](#) by Prof. Dennis Freeman

Fall 2019, [Georgia Tech, Introduction to Computer Vision](#) by Prof. Aaron Bobick

Summer 2019, [Intro to TensorFlow for Deep Learning](#) by AWS

Summer 2019, [Stanford, Machine Learning](#) by Prof. Andrew Ng

Selected AI Projects

[Fall 2023, Introduction to machine learning](#) by Dr. Pedram Rooshenas

Selected Projects :

- Spiking Neural Network classifier (MNIST dataset).
- I build a attention based (transformers) language model from scratch that was able to classify citations.

Personal Projects

- Edge Motion Detection by Discrete Markov Random Fields and Belief Propagation.

[Spring 2021, Fundamentals of Computer Vision](#) by Dr. Behrooz Nasihatkon

Selected Projects :

- Final Project: producing BEV (bird's eye view) perspective of a soccer match live stream. (PyTorch, OpenCV)

[fall 2020, System Analysis and Design](#) by Dr. Mehdi Esnaashari

Selected Projects :

- Recommender System for an art website (combination of content base, collaborative filtering, and latent space model) (PyTorch)

[Spring 2020, Stanford cs231n](#) by Prof. Fei-Fei Li

Selected Projects :

- LSTMs For Image captioning COCO data set (PyTorch)
- Standard GAN, DC-GAN, LS-GAN to generate Images close to MNIST data. (PyTorch)

[Spring 2020, Neural Networks and Deep Learning](#) by Prof. Andrew Ng

Selected Projects:

- Deep Neural Network for Image Classification (python)
- Logistic Regression for cat recognition (python)

[Spring 2020, Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization](#) by Prof. Andrew Ng

Selected Projects:

- leveling up network accuracy by different tricks :
initialization i.e. Xavier, ...
reguralization i.e. drop out, batch normalization,... (python)

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Summer 2019, Stanford University Machine Learning by Prof. Andrew Ng,

Selected Projects:

- Image Compression With K-Means Clustering (Matlab|Octave)
- PCA On Face Images (Matlab|Octave)
- Recommender Systems For Movies (Matlab|Octave)

Programming Languages

Python , Java , C , C++ , Matlab , Octave , SQL , Assembly