Matin Moezzi

matin.moezzi@mail.utoronto.ca matinmoezzi.github.io github.com/matinmoezzi

Education

2022 – Present **Master of Applied Science, Mechanical and Industrial Engineering Department, University of Toronto**

2016 – 2021 **Bachelor of Computer Science—Minor in Mathematics, Department of Mathematics & Computer Science, Amirkabir University of Technology (Tehran Polytechnic)**

Advanced Programming	18.5/20	Computer Simulation	20/20
Artificial Intelligence	Pass/Fail	Numerical Linear Algebra	18.5/20
Compiler	19.5/20	Data Mining	Pass/Fail
Stochastic Processes (I)	Pass/Fail	Probability (I)	18.4/20
Nonlinear Optimization	Pass/Fail	Linear Optimization	17.8/20
Computer Networks (with Lab.)	17.3/20	Operating Systems	19.5/20
Principles of Software Design	18/20		

* *PASS/FAIL grading policy in Spring 2020 semester*

2012 – 2016 **Mathematics & Physics Diploma, Allame Tabatabae High School, Advanced Department**

Astronomy and Astrophysics Olympiad Student – GPA: 19.71/20

Research Experience

2021 **Data-Efficient Hierarchical Reinforcement Learning using Importance Sampling** [PDF][Code]

Developed an approach to improve data-efficiency of the hierarchical deep Q network algorithm (h-DQN) using the importance sampling method.

2021 **An Uncertainty-Aware Pseudo-Label Selection Framework using Regularized Conformal Prediction** [PDF][Code]

Employing uncertainty sets yielded by the conformal regularization algorithm in the uncertainty-aware pseudo-label selection framework to fix the poor calibration neural networks, reducing noisy training data.

2020 **(I) Applying Deep Reinforcement Learning to Solve Control Problems Described by a System of Delay Differential Equations (DDEs)**

Computational Intelligence & High Dimensional Systems Lab.
Faculty of Electrical Engineering, Amirkabir University of Technology
Under Supervision of **Prof. Mohammad B. Menhaj**

(II) Solving the System of ODEs of the Control Spread of Ebola Virus Epidemic using Deep Neural Networks [Code]

Faculty of Mathematics and Computer Science
Under Supervision of **Prof. Mostafa Abbaszadeh**

(III) Adding the L-BFGS Support for Training DNNs to the *NeuroDiffEq* package [Code]

Teaching Experience

Operating Systems, Teaching Assistant, Faculty of Computer Science, Amirkabir University of Technology, Fall 2019, Spring 2020, Spring 2021
Under Supervision of Prof. Nourikhah

Computer Networks, Teaching Assistant, Faculty of Computer Engineering, Amirkabir University of Technology, Spring 2020
Under Supervision of Prof. Sabaei

Work Experience

2018 – 2019 **Software Developer**, iTours Online Travel Agency Co., Tehran, Iran

Designed and Implemented enterprise SOAP & Restful Web Services
Developed Asp.Net Core Web Apps & Web APIs

2017 – 2018 **Web Developer**, Parsian Insurance Co., Tehran, Iran

Effectively refactored previous projects based on Design Patterns & SOLID principles
Developed Asp.Net web applications for the insurance management system
Developed front-end side of web applications with HTML, CSS & Javascript

Online Degrees & Courses

Artificial Intelligence Nanodegree Peter Norvig & Sebastian Thrun, Udacity [See the Certificate]

Reinforcement Learning Specialization, University of Alberta, Coursera [See the Certificate]

Practical Reinforcement Learning (with honors), HSE, Coursera [See the Certificate]

Deep Learning Specialization, Andrew Ng, deeplearning.ai, Coursera [See the Certificate]

Cutting-Edge AI: Deep Reinforcement Learning in Python, Udemy [See the Certificate]

Natural Language Processing Specialization, deeplearning.ai, Coursera [See the Certificate]

TensorFlow Developer Specialization, deeplearning.ai, Coursera [See the Certificate]

Machine Learning, Andrew Ng, Stanford University, Coursera [See the Certificate]

Network Function Virtualization, Georgia Institute of Technology, Coursera [See the Certificate]

Software Defined Networking, The University of Chicago, Coursera [See the Certificate]

Generative Adversarial Networks Workshop,
Amirkabir Artificial Intelligence Summer Summit 2020 [See the Certificate]

Deep Reinforcement Learning by Sergey Levine, CS 285 UC Berkeley, Youtube Lectures

Reinforcement Learning by David Silver, DeepMind & UCL, Youtube Lectures

Course Projects

Practical Reinforcement Learning Course by Coursera [Code]

- Taxi-v3 Env. using Q-Learning and Experience Replay
- Deep Kung-Fu with A2C Algorithm
- Atari Breakout Game using DQN
- Cartpole-v0 using REINFORCE Algorithm
- Cliff walking using SARSA Algorithm
- Cartpole-v0 using Deep Cross Entropy

Lunar Lander Problem with Deep RL Agent, Reinforcement Learning Specialization, Coursera [Code]

Machine Learning Algorithms in Scikit-learn library, Data Mining Course [Code]

Part of Speech Tagging with HMM, AI Nanodegree, Udacity [Code]

Air Cargo Planning Problem, AI Nanodegree, Udacity [Code]

Knights Isolation Game with Adversarial Search Algorithms, AI Nanodegree, Udacity [Code]

Othello, Tic-Tac-Toe & 8-Puzzle Adversarial Game Playing Agents, Artificial Intelligence Course [Code]

Readers-Writers & Dinning Philosophers Problem, Operating Systems Course [Code]

Distributed Calculator with Client-Server Architecture using TCP, Computer Networks Course [Code]

P2P File Transfer using UDP, Computer Networks Course [Code]

Linear Matrix Equation Solver in C, Numerical Linear Algebra Course [Code]

MySQL interface for Massive Datasets in C, Database Course [Code]

Skills

Statistics: Inferential Statistics (Parametric & Nonparametric), Bayesian Statistics

Machine Learning • Deep Learning • Evolutionary Methods • Knowledge Representation & Reasoning

Reinforcement Learning: SARSA, Q-Learning, DQN, A2C, A3C, DDPG, TD3, PPO, TRPO

Natural Language Processing: Word Embeddings, Siamese Network, LSTM, Attention and Transformer

Software Programming: OOP, Microservices, SOLID Principles, SOAP & Restful Web Services

Computer Network: OSI Architecture, TCP/IP, SDN & NFV, Mininet Emulator

Programming Languages: C/C++, Python, MATLAB, R, GO, Java, C#, SQL, Javascript

Libraries: Pandas, Scikit-learn, PyTorch, TensorFlow, Keras, OpenAI Gym, MuJoCo Engine, OpenMP

Tools & Frameworks: .Net/Asp.Net, Wireshark, Boson (Computer Network Simulator), LaTeX, Git

Others: GNU/Linux, Bash scripting, MySQL

Activities

Editorial Board Member of Student Scientific Journal, Mathematics & Computer Science Faculty
Amirkabir University of Technology, 2020 - Present

Scores

TOEFL iBT: 95/120

GRE Test: Quantitative Reasoning: 165/170, Verbal Reasoning: 151/170, Analytical Writing: 3.5/6.0

References

Prof. Chi-Guhn Lee, Full Professor, Department of Mechanical and Industrial Engineering, University of Toronto
cglee@mie.utoronto.ca

Prof. Mohammad B. Menhaj, Full Professor, Department of Electrical Engineering, Amirkabir University of Technology (Tehran Polytechnic), Iran, menhaj@aut.ac.ir

Prof. Mostafa Abbaszadeh, Assistant Professor, Department of Mathematics & Computer Science, Amirkabir University of Technology (Tehran Polytechnic), Iran, m.abbaszadeh@aut.ac.ir

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