Mohammad Mashreghi

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EDUCATION

University of Tehran **Sep 2020 – Sep 2024**
B.Sc in Electrical Engineering *Tehran, Iran*
- GPA: 18.07/20

University of Tehran **Sep 2022 – Sep 2024**
Minor in Business Management *Tehran, Iran*
- GPA: 17.92/20

Derkhshande Sarraf High School **Sep 2017 – Jun 2020**
Highschool Diploma, Mathematics *Yazd, Iran*
- GPA: 19.07/20

RESEARCH INTERESTS

- Federated Learning
- Reinforcement Learning
- Optimization
- Adversarial ML
- Graph Neural Network
- Game Theory & Dynamic Systems

HONORS AND AWARDS

- Ranked **the 6th** in control engineering, University of Tehran.
- Ranked in the **the top 20** among 103 Electrical Engineering B.Sc. students, University of Tehran.
- Ranked among **the top 0.6%** in approximately 155,000 participants in the Nationwide Iranian Universities Entrance Exam, 2020.

Articles

Risk Sensitivity in Markov Games and Multi-Agent Reinforcement Learning: A Systematic Review
Under review.(Also arxiv)

Resilient Federated Vision Transformer for Alzheimer's Disease Prediction with Brain Imaging Data
working on

RESEARCH EXPERIENCE

Internship **Jul 2023**
- In this Internship course, goal were to find suitable voice call package for each user, and find create new packages according to the behavior of users according to the price of pkg, volume of pkg and period of it, the main challenge of which is the lack of number of user in the dataset that we can use for clustering. Therefore , we try to extract more feature from the dataset and create new clusters according to period of the pkg.

SKILLS

Programming Languages: Python, C/C++, MATLAB, Verilog, LaTeX
Frameworks & Libraries: PyTorch, TensorFlow, scikit-learn, Pandas, NumPy, Simulink
Hardware & System Design: STM32Cube, ModelSim, Intel Quartus Prime, NI Multisim
Soft Skills: Team work, Social Communication, Adaptability, Critical thinking

CERTIFICATIONS

- **Using Python to Access Web Data** | Coursera
- **Advanced Learning Algorithms** | Coursera
- **Object-Oriented Data Structures in C++**
- **Introduction to Git and GitHub** | Coursera
- **Deep Learning** | Neuromatch Academy

RELEVANT COURSES

- **Linear Control System** (18.8/20)
- **Engineering Probability and Statistics** (19.59/20)
- **Engineering Mathematics** (20/20)
- **Machine Learning** (Grad. Course) (18.7/20)
- **Introduction to Computing Systems and Programming(ICSP)** (18.63/20)
- **Numerical Computation** (18.39/20)
- **Distributed Optimization and Learning** (Grad. Course)(19.30/20)
- **Modern Control Systems** (17.9/20)
- **Advanced Programming** (19.70/20)
- **Linear Algebra** (16.75/20)
- **Data Structures and Algorithms** (20/20)
- **Game Theory** (17.25/20)

NOTABLE PROJECTS

Machine Learning & Optimization

- **Distributed Cooperative Competitive Multi Agent Reinforcement Learning in Markov Games** | Implementiong Q-learning, Actor-critic, Minimax, Belief based algo, Independent Q-learning, and Disturbuted Q-learning, DDPG, MADDPG. (Distributed Optimization and Learning)
- **Robust-Federated-Primal-Dual-Learning-for-Android-Malware-Classification-via-Adversarial-Robustness** | In this project, the goal is to achieve robust federated learning for Android malware classification through adversarial robustness(FGSM-PGD). (Distributed Optimization and Learning)
- **Familiar with optimization methods like ADMM and dynamic programming. (Distributed Optimization and Learning)**
- **Detect fake picture with ML** | In this project, fake and real pictures of mountains, sea, and forests are used to detect fake ones. (Machine Learning)
- **Familiar with neural networks like LSTMs, RNN, FFNN and their applications. (Machine Learning)**
- **TRPCA and SVD-based digital Watermarking** | Implementing Tensor Robust Principal Component Analysis and digital Watermarking with python. (Linear Algebra)
- **A presentation about A Unified Game-Theoretic Approach to Multiagent Reinforcement Learning article** | (Game Theory)
- **Sequential Data Processing with RNN** | (Neuromatch Academy)

Control Systems

- **Designing PID Controller for non-Linear System** (Linear Control Systems)
- **Electromagnetic Levitation System Modeling** | A simple simulation in Matlab and tested in real device. (Modern Control)
- **Signal Processing with Designing Filters, ARM Programming with STM32IDE** (Instrumentation)

Data Science

- **Working with heaps and Tress such as B-Tree, Binomial heap** (Data Structure and Algorithms)
- **Finding Optimal Paths in Graph with DFS and BFS** (Data Structure and Algorithms)

Proramming

- **PacMan game** | A simple game in CMD.(Introduction to Computer Systems and Programming)
- **Designing an online market** | An online market designed using C++ with various facilities.(Advanced Programming)

In addition, for more information about some of the university course project, please visit my GitHub.

TEACHING ASSISTANT EXPERIENCES

- **General workshop** (spring 2022)
- **Linear Control Systems** (fall 2023, spring 2024)
- **Engineering Mathematics** (fall 2023)
- **Digital Systems 2** (fall 2023, spring 2024)
- **Engineering Probability and Statistics** (spring 2023)
- **Electrical Introduction** (spring 2022, Spring 2023)

LANGUAGES

- **English:** Advanced
- **Persian:** Native