

MOHAMMAD MASHREGHI

University of Tehran, Department of Electrical & Computer Engineering

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Mashreghi

M-Mashreghi

Webpage

EDUCATION

Sharif University

MBA major in technology

Sep 2025

Tehran, Iran

University of Tehran

Sep 2020 – Dec 2024

B.Sc in Electrical Engineering - Control Systems, Minor in Management

Tehran, Iran

- **Overall Major Score:** 18.07/20.00
- **Overall Minor Score:** 17.92/20.00
- **Courseworks:** Distributed Optimization and Learning (19.30-grad course), Engineering Probability and Statistics (19.59), Engineering Mathematics (20), Machine Learning (18.7-grad course), Game Theory (17.25-grad course), Modern Control Systems (17.9), Advanced Programming (19.70), Linear Algebra (16.75), Data Structures and Algorithms (20), Operation Research (Current Semester)
- **Project:** Enhancing the robustness of federated learning by applying various methods to fortify networks against attacks. (presentation [↗](#))
- **Supervisor:** Prof. H. Kebriaei

Articles

- Risk Sensitivity in Markov Games and Multi-Agent Reinforcement Learning: A Systematic Review (Under review at IEEE Transactions on Artificial Intelligence), (Also on arXiv: <https://arxiv.org/abs/2406.06041>)
- Resilient Federated Vision Transformers for Alzheimer's Disease Prediction with Brain Imaging Data Jittering (Under review IEEE transaction on consumer electronics) ([↗](#))
- Partial Federated Primal-Dual Optimization for Network-Based Android Malware Detection (Under review [↗](#))
- Incentive Mechanism for Federated Learning, Multi Agent Reinforcement Learning (working)

RESEARCH EXPERIENCES

Identify and Design Voice Call Packages Based on User Behavior

Summer Internship

June 2023 – Sep 2023

Smart Network Lab - University of Tehran

Under supervision of Prof. H. Kebriaei

- Identified suitable voice call packages for each user by analyzing user behavior, package price, volume, and duration.
- Designed new packages based on user segmentation, addressing the main challenge of a limited number of users in the dataset by extracting additional features and creating clusters based on package duration.

Distributed Reinforcement Learning for Traffic Signal Control under Adversarial Conditions

Research Experience

Jan 2024

Smart Network Lab

- Reviewed various distributed RL methods applied to traffic signal control, focusing on assumptions like loss functions and system robustness to attacks.

Market Analysis and Automated Trading Bot Development

Work Experience

Jan 2023 - July 2024

Cryptocurrency and Forex Markets

Analyzer and Programmer

- Conducted initial market analysis using basic methods and indicators for the cryptocurrency and forex markets.
- Developed Python code to automate buying and selling activities based on market trends.
- Created an alert bot to notify users of market changes, integrating various strategic plans for different time frames.

HONORS AND AWARDS

- Ranked **the 8th** in control engineering among 35, University of Tehran.
- Ranked in the **the top 20 (17th)** among 120 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.

TEACHING ASSISTANT EXPERIENCES

Linear Control Systems <i>Prof. A. Yaghmaei & Prof. M. Nayeri</i> <ul style="list-style-type: none">• HW & Matlab Exam Designer/Grader	<i>Fall 2023, Spring and Fall 2024</i>	Electrical Introduction <i>Prof. M. Samimi</i> <ul style="list-style-type: none">• Laboratory Instructor• HW Designer/Grader	<i>Spring 2023, Spring 2024</i>
Computer Architecture <i>Prof. S. Safari</i> <ul style="list-style-type: none">• HW & CA Designer/Grader	<i>Spring 2023, Fall 2024</i>	Engineering Probability and Statistics <i>Prof. A. Dehaqani</i> <ul style="list-style-type: none">• HW Designer/Grader	<i>Spring 2023</i>
Engineering Mathmatics <i>Prof. R. Nasiri</i> <ul style="list-style-type: none">• HW Designer/Grader	<i>Fall 2023</i>	Distributed Optimazation and Learning <i>Prof. Kebriaei</i> <ul style="list-style-type: none">• Project Designer & guider	<i>Fall 2024</i>

NOTABLE PROJECTS

Machine Learning Applications & Optimization

- Distributed Cooperative Competitive Multi Agent Reinforcement Learning in Markov Games with various methods [↗](#) (Distributed Optimization and Learning)
- Robust Federated Primal Dual Learning for Android Malware Classification [↗](#) (Distributed Optimization and Learning)
- Detect fake pictures with ML [↗](#) (Machine Learning)
- Sequential Data Processing with RNN [↗](#) (Deep learning, Neuromatch Academy)
- Performed background isolation in images using robust PCA [↗](#) (Linear Algebra)
- Implemented digital watermarking using Support Vector Machines [↗](#) (Linear Algebra)
- Worked with data structures such as B-trees and binomial heaps using Python [↗](#) (Data Structure and Algorithms)
- Implementing and Working with different neural network [↗](#) (Deep Learning)
- Familiar with ADMM and dynamic programming through course exercises, using the CVXPY and YALMIP framework. (Distributed Optimization and Learning)

Control Systems

- Electromagnetic Levitation System Modeling [↗](#) (Linear Control Systems)
- Ball and Beam Control System Modeling [↗](#) (Modern Control)

Programming

- Developed an automated trading bot [↗](#) (Work experience)
- Leverage and quantities of coin calculator app [↗](#)
- PacMan game in CMD [↗](#) (Introduction to Computer Systems and Programming)
- Designing an online market using C++ [↗](#) (Advanced Programming)

SKILLS

Soft Skills: Resilience, Team work, Social Communication, Adaptability, Critical Thinking
Programming Languages: C/C++, MATLAB, Verilog, LaTeX
Frameworks & Libraries: PyTorch, TensorFlow, Torchattack,Torchvision, scikit-learn, CVXPY, YALMIP
Hardware & System Design: STM32Cube, ModelSim, Intel Quartus Prime, Ppice

VOLUNTEER ACTIVITIES

- Member of Flat Earth
 - Collaborated with marketing team: event promotion, ticket sales, targeted advertising, attendance growth.
- Member of Physicskoh (Mountain Climbing)
 - Roles: Mountain Guide, Reporter and Photographer, Leadership and Guidance Programs.