

# MOHAMMAD MASHREGHI

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Mashreghi

M-Mashreghi

Webpage

## EDUCATION

### University of Tehran

Sep 2020 – Dec 2024

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

*Tehran, Iran*

- **Overall Major Score:** 18.10/20.00
- **Overall Minor Score:** 17.39/20.00
- **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)
- **Supervisor:** Prof. H. Kebriaei

## Articles

- Risk Sensitivity in Markov Games and Multi-Agent Reinforcement Learning: A Systematic Review (↗)
- Resilient Federated Vision Transformers for Alzheimer's Disease Prediction with Brain Image: B.S. thesis( ↗)
- Partial Federated Primal-Dual Optimization for Network-Based Android Malware Detection ( ↗)
- Consensus-Constrained Dual-Federated Optimization with Dynamic Weighting for Distributed Mobile Threat Classification(under review)
- Gaussian-Process-based Inverse Reinforcement Learning with Scenario-Based MPC Framework for Human-Like Driving Behavior Modeling(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

- Accepted as an **Economics student** at **Teias (Khatam) University** through the Nationwide Universities Entrance.
- **Admitted to Sharif University MBA Program** under the **Exceptional Talent** admission category.
- 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

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### Linear Control Systems

- HW & Matlab Exam Designer/Grader

### Computer Architecture

- HW & CA Designer/Grader

### Engineering Mathematics

- HW Designer/Grader

### Electrical Introduction

- Laboratory Instructor
- HW Designer/Grader

### Engineering Probability and Statistics

- HW Designer/Grader

### Distributed Optimization and Learning

- Project Designer & Guider

## NOTABLE PROJECTS

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### 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)
- Implementing and Working with different neural network [↗](#) (Deep Learning)
- House Property Sales Time Series [↗](#) (Deep Learning)
- Hourly Energy Consumption [↗](#) (Deep Learning)
- Fake Real News Classification [↗](#) (NLP)
- Twitter Sentiment Analysis [↗](#) (NLP)
- Tesla Stock Price Prediction using Facebook Prophet [↗](#) (Time Series)

### Control Systems

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

### Programming & GitHub Projects

- Developed an automated trading bot [↗](#) (Work experience)
- Leverage and quantities of coin calculator app [↗](#)
- Designing an online market using C++ [↗](#) (Advanced Programming)

## SKILLS

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**Soft Skills:** Resilience, Team work, Social Communication, Adaptability, Critical Thinking

**Programming Languages:** C/C++, MATLAB, R, Docker, SQL(lite), LaTeX

**Frameworks & Libraries:** PyTorch,,Torchvision, scikit-learn, Power BI, CVXPY

**Interest & Sports:** Travelling, podcasts, Surfing the internet, Video Games, gym

## CERTIFICATIONS

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Advanced Learning Algorithms — Coursera

Deep Learning — Neuromatch Academy

Financial Markets — Yale University (via Coursera)

AI Agents Fundamentals — Hugging Face