

MOHAMMAD MASHREGH

University of Tehran, Department of Electrical & Computer Engineering

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EDUCATION

University of Tehran

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

Sep 2020 – Dec 2024

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

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

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 ↗
- Ball and Beam Control System Modeling ↗

(Linear Control Systems)
(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

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

Advanced Learning Algorithms — Coursera

Deep Learning — Neuromatch Academy

Financial Markets — Yale University (via Coursera)

AI Agents Fundamentals — Hugging Face