

Mehran Attar

Ph.D. Candidate and Research Assistant,

Location: Montreal, Quebec, Canada

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Professional links: [LinkedIn](#) | [GoogleScholar](#) | [GitHub](#)

EDUCATION

- **Ph.D. in Information and Systems Engineering** Sep. 2020 - Present
Institute for Information Systems Engineering, Concordia University Montreal, Canada
- **M.Sc. in Electrical Engineering, Control Systems** Sep. 2014 - March 2017
School of Electrical and Computer Engineering, Tarbiat Modares University Tehran, Iran
- **B.Sc. in Electrical Engineering, Control Systems** Sep. 2009 - Feb. 2011
School of Electrical Engineering, Sharif University of Technology Tehran, Iran
- **B.Sc. in Electrical Engineering, Control Systems** Jan. 2008 - July 2013
School of Electrical Engineering, Hamedan University of Technology Hamedan, Iran

HONORS AND AWARDS

- **Tuition Award of Excellence** Sep. 2020
Scholarship Prize Concordia University, Montreal, Canada
- **Ranked 3rd among all graduated students** March 2017
M.Sc. Graduated Student Tarbiat Modares University, Tehran, Iran
- **Semi-Finalist** Dec. 2004
National Chemistry Olympiad Tehran, Iran

FIELDS OF INTEREST

- | | | |
|---|--|---|
| • Computer Science
Applied Machine Learning
Reinforcement Learning
Data Analysis
Applied Deep Learning | • Control Theory
Automatic Control
Data-Driven Control
Learning Control
Convex Optimization | • Industrial Applications
Wind Turbines
Cyber-Physical Systems
Robotics |
|---|--|---|

PROFESSIONAL EXPERIENCES

Industrial Experiences

- **Applied Machine Learning Engineer & Data Scientist** April 2017 - Aug. 2021
MAPNA Group Karaj, Iran
 - Anomaly detection in wind turbine using machine learning methods based on SCADA data
 - Design and implementation of an online asset performance monitoring system using intelligent algorithms for wind turbines
- **Control Systems Engineer** April 2017 - Sep. 2018
MAPNA Group Karaj, Iran
 - Configuration of data acquisition systems, e.g., MC Monitoring, VM-600, National Instrument System
 - Design and implementation of Kahak wind turbine simulator equipped with DFIG

Academic Experiences

- **Research Scientist** Sep. 2020 - Present
Cyber-Physical Systems Security Research Group Montreal, Canada
 - Design and implementation of intelligent algorithms for the safety and security of naval vessels (project for Department of National Defence, Canada) [link](#)
 - Security and safety of cyber-physical systems using data-driven and artificial intelligence methods
- **Research Assistant** Nov. 2015 - April 2017
Intelligent Control Systems Lab Tarbiat Modares University, Tehran, Iran
 - Dynamical Modeling of Quadruped Robot Using Artificial Intelligence Models methods based on SCADA data
 - Design and Implementation a Controller for Quadruped Robot ([TMUBOT](#))

- **Programming Languages:** Python - MATLAB
- **Operating Systems:** Windows - Linux
- **Data Science Libraries:** Pandas - Numpy - Scipy
- **Plotting Libraries:** Matplotlib - Plotly
- **Documentation Tools:** LaTeX - MS Office
- **Version Control:** Git - GitHub
- **Machine Learning & Deep Learning Libraries:** Scikit-learn - Pytorch
- **Database:** Pyspark

JOURNAL PUBLICATIONS

- [1] **Mehran Attar** and Walter Lucia, "Data-Driven Robust Backward Reachable Sets for Set-Theoretic Model Predictive Control," IEEE Control System Letters (L-CSS), 2023. [link](#)
- [2] **Mehran Attar**, Walter Lucia, "An Active Detection Strategy Based on Dimensionality Reduction for False Data Injection Attacks in Cyber-Physical Systems," IEEE Transactions on Control of Network Systems, 2023. [link](#)
- [3] **Mehran Attar**, Navid Dini, and Vahid Johari Majd, "Analysis and Design of a Time-Varying Linear Extended State Observer for a Class of Nonlinear Systems with Unknown Dynamics Using Spectral Lyapunov Function," Journal of Intelligent and Robotic Systems, vol. 94, pages 405-421, 2018. [link](#)
- [4] **Mehran Attar**, Mohammadreza Dabirian, "Reinforcement Learning for Learning of Dynamical Systems in Uncertain Environment: A Tutorial," arXiv preprint arXiv: 1905.07727, 2019. [link](#)

CONFERENCE PROCEEDINGS

- [1] **Mehran Attar**, Mahdi Khodabandeh, "Design a Hybrid Model Predictive Controller for a DC-DC Converter," 12th International Seminar on Power Electronics Technologies (TPES 2015), March 2015, Sharif University of Technology, Tehran, Iran. (written in Persian)
- [2] **Mehran Attar**, Navid Dini, Farid Edrisi and V.j.Majd, "Estimation of Decentralized Unknown Dynamics for a 2DOF Manipulator Using a Time-Varying Extended State Observer" The 4th International Conference on Robotics and Mechatronics (ICROM 2016), Oct 2016, University of Tehran, Tehran, Iran. [link](#)
- [3] Farid Edrisi, Vahid Johari Majd, **Mehran Attar**, and Navid Dini, "Modifying the Attitude of Quadruped Robot Body against Disturbances via Data," The 4th International Conference on Robotics and Mechatronics (ICROM 2016), Oct 2016, University of Tehran, Tehran, Iran. [link](#)
- [4] Navid Dini, Vahid Johari Majd, Farid Edrisi and **Mehran Attar**, "Estimation of External Forces Acting on the Legs of a Quadruped Robot using Two Nonlinear Disturbance Observers," The 4th International Conference on Robotics and Mechatronics (ICROM 2016), Oct 2016, University of Tehran, Tehran, Iran. [link](#)

REFERENCES

- **Prof. Walter Lucia**
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