Mehran Attar

Ph.D. Candidate and Research Assistant,
Location: Montreal, Quebec, Canada
Email address: mehran.attar@concordia.ca
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
  Applied Deep Learning
  Reinforcement Learning
  Natural Language Processing

- **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 Intern	Jan. 2024 - Present
[Ericsson](#)	*Montreal, Canada*
Applied Industrial Machine Learning Research 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)

SOFTWARE SKILLS

- **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, "A Data-Driven Safety Preserving Control Architecture for Constrained Cyber-Physical Systems," Submitted to IEEE Control System Letters (L-CSS), 2024. link

[2] **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

[3] **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

[4] **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

[5] **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**
  Institute for Information Systems Engineering, Concordia University
  1455 de Maisonneuve Blvd. West, EV009.185 Montreal, Quebec, Canada, H3G 1M8
  Phone: (514) 848-2424 ext. 3982
  Email: walter.lucia@concordia.ca

- **Prof. Vahid Johari Majd**
  Department of Electrical and Computer Engineering, Tarbiat Modares University
  P.O. Box 14115-194, Tehran, Iran
  Phone: (+9821) 82883353
  Email: majd@modares.ac.ir