

Amin Taghieh

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Education

Doctor of Philosophy (Ph.D.) <i>Industrial Engineering</i>	New Jersey Institute of Technology, Newark, USA 2024–present
Master of Science (M.Sc) <i>Electrical Engineering-Control</i> Thesis Title: Robust control of switched nonlinear systems	University of Tabriz, Tabriz, Iran 2016–2019
Bachelor of Science (B.Sc) <i>Electrical Engineering</i>	Shahid Bahonar Technical & Engineering College, Shiraz, Iran 2013–2016

Research Interests

Optimization
Model Predictive Control
Deep Learning
Reinforcement Learning
Power systems

Experience

Applied Soft Computing <i>Reviewer</i>	Elsevier 2024–present
International Journal of Fuzzy Systems <i>Reviewer</i>	Springer 2022–present
IEEE Transactions on Automation Science and Engineering <i>Reviewer</i>	IEEE 2024–present

Research Experience

Safety-critical systems <i>Safe control and control barrier functions</i>	2022-2024
• Research Topic: Implementation of control barrier functions for mobile robots subject to communication delay	
Direct data-driven methods <i>Direct data-driven control and linear matrix inequalities</i>	2022-2024
• Research Topic: Direct data-driven control approaches for switched multi-agent systems	
Nonlinear systems with unknown dynamics <i>Neuro-Fuzzy based control</i>	2020–2022
• Research Topic: Adaptive control implementation for complex systems (i.e., power systems, underactuated surface vehicles, robots) with unknown dynamics	
Multi-agent systems <i>Distributed control/estimation</i>	2020–2022
• Research Topic: Distributed control/estimation of multi-agent systems subject to delay and switching graph topology	
Switched systems <i>Convex optimization and linear matrix inequalities</i>	2019–2021

- Research Topic: Robust control of switched systems subject to asynchronous switching signal and MPC control of discrete-time switched systems subject to input constraints

Publications

Journal Articles:

- **A. Taghieh**, A. Mohammadzadeh, C. Zhang, S. Rathinasamy, and S. Bekiros, "A novel adaptive interval type-3 neuro-fuzzy robust controller for nonlinear complex dynamical systems with inherent uncertainties," *Nonlinear Dynamics*, 2022. DOI link.
- **A. Taghieh**, A. Mohammadzadeh, C. Zhang, N. Kausar, and O. Castillo, "A type-3 fuzzy control for current sharing and voltage balancing in microgrids," *Applied Soft Computing*, 2022. DOI link.
- **A. Taghieh**, C. Zhang, K. A. Alattas, Y. Bouteraa, S. Rathinasamy, and A. Mohammadzadeh, "A predictive type-3 fuzzy control for underactuated surface vehicles," *Ocean Engineering*, 2022. DOI link.
- **A. Taghieh**, A. Mohammadzadeh, S. U. Din, S. Mobayen, S. Assawinchaichote, and A. Fekih, " H_∞ -based control of multi-agent systems: Time-delayed signals, unknown leader states and switching graph topologies," *PLoS ONE*, 2022. DOI link.
- M. Doostmohammadian, **A. Taghieh**, and H. Zarrabi, "Distributed Estimation Approach for Tracking a Mobile Target via Formation of UAVs," *IEEE Transactions on Automation Science and Engineering*, 2021. DOI link.
- **A. Taghieh**, A. Mohammadzadeh, J. Tavoosi, S. Mobayen, T. Rojisoraphisal, H. Asad, and V. Zhilenkov, "Observer-based control for nonlinear time-delayed asynchronously switching systems: A new LMI approach," *Mathematics*, 2021. DOI link.
- **A. Taghieh**, A. Aly, B. F. Felemban, A. Althobaiti, A. Mohammadzadeh, and A. Bartoszewicz, "A hybrid predictive type-3 fuzzy control for time-delay multi-agent systems," *Electronics*, 2021. DOI link.
- **A. Taghieh**, and M. H. Shafiei, "Observer-based robust model predictive control of switched nonlinear systems with time delay and parametric uncertainties," *Journal of Vibration and Control*, 2021. DOI link.
- **A. Taghieh**, and M. H. Shafiei, "Static output feedback control of switched nonlinear systems with time-varying delay and parametric uncertainties under asynchronous switching," *Transactions of the Institute of Measurement and Control*, 2021. DOI link.

Conference Papers:

- **A. Taghieh**, F. Hashemdazeh, and M. H. Shafiei, "Robust stabilization of a class of switched nonlinear systems with time-varying delay and parametric uncertainty under asynchronous switching," in *2020 28th Iranian Conference on Electrical Engineering (ICEE)*, IEEE, 2020. DOI link.
- **A. Taghieh**, F. Hashemdazeh, and M. H. Shafiei, "Robust stabilization of discrete-time switched systems with state delay and parametric uncertainty via novel predictive control approach," in *2019 6th International Conference on Control, Instrumentation and Automation (ICCIA)*, IEEE, 2019. DOI link.

Skills

Programming Skills: Python, MATLAB & Simulink, LaTeX