

ALI KARIMPOUR, Ph.D.,

Professor, Department of Electrical
Engineering,

Ferdowsi University of Mashhad

Last Updated: August 2024

EDUCATION

1998-2003	Ph.D. in Elec. Eng. Ferdowsi University, Mashhad, Iran
2002-2003	Visiting Ph.D. student at the University of Calgary, Alberta, Canada
1987-1990	M. S. in Elec. Eng. Ferdowsi University, Mashhad, Iran
1983-1987	B. S. in Elec. Eng. Ferdowsi University, Mashhad, Iran

WORK EXPERIENCE

2021- current	Professor at Ferdowsi University, Mashhad, Iran
2019-2020	Visiting Professor at RMIT University, Melbourne. Australia
2019	Visiting Professor at Dayalbagh Educational Institute, Agra, India
2012-2021	Associate Professor: Ferdowsi University, Mashhad, Iran
2003-2012	Assistant Professor: Ferdowsi University, Mashhad, Iran
1900-2002	Lecturer: Ferdowsi University, Mashhad, Iran
1994-1998	Director: Academic Studies Office, Ferdowsi University, Mashhad, Iran
1990-1992	Director: Academic Affairs, Ferdowsi University, Mashhad, Iran

TEACHING ACTIVITIES

Undergraduate Courses:

Advanced Engineering Mathematics	Linear Algebra
Computer Programming	Electrical Machine
Linear Control System	Power System Analysis
Advanced Control Systems	Photovoltaic Systems

Graduate Courses:

Optimal Control	Modern control
Digital Control Systems	Multivariable Control Systems
Hybrid Control Systems	System Identification

RESEARCH ACTIVITIES

Research Interest

- Intelligent Transportation Systems
- Renewable Energy
- Traffic Modeling
- Application of ML/AI in Smart Systems
- Multivariable Control Systems
- System Identification

Selected Projects & Grants

2019-2021	Designing a Micro Grid for the Engineering Faculty of Ferdowsi University of Mashhad
2016-2018	Restoration Program for Power System, Ferdowsi University of Mashhad-Phase II
2015-2016	Restoration Program for Power System, Ferdowsi University of Mashhad-Phase I
2015-2016	Real-Time Pricing for Electrical Energy in Iran Power Market, Ferdowsi University of Mashhad

2007-2012	Research on starting two side power market of the Iranian Electricity Market, Ferdowsi University of Mashhad
2007-2008	Load Management market for Iranian Electricity Market, Ferdowsi University of Mashhad
2006-2007	Load management investigation for Khuzestan Electric Utility, Ferdowsi University of Mashhad
2006-2007	Reactive Market Designing for Iranian Electricity Market, Ferdowsi University of Mashhad
2005-2006	Short-term Load Forecasting for Khuzestan Electric Utility and bidding strategy for Khuzestan Electric Utility, Ferdowsi University of Mashhad

Selected Journal Publications

1. S.H., Ejtahed, N. Naser, and **A. Karimpour** "Fault Diagnosis and Control of the Boost Converter Switching System In Energy Conversion Systems, *Energy Engineering and Management*, 2023.
2. M. Maryam, A. Heydari, and **A. Karimpour**. "Approximate Solution of General mp-MILP Problems and Its Application in Urban Traffic Networks." *International Journal of Mathematical Modeling & Computations* 1.1 (2023):
3. S.H., Ejtahed, N. Naser, and **A. Karimpour** "Integrated Fault Detection and Robust Control for Linear Uncertain Switched Systems with Mode-Dependent Time-Varying State Delay," *Control and Optimization in Applied Mathematics* 7 (2), 1-34, 2022.
4. M. Mahmoudi, A. Heidari, and **A. Karimpour** "*Explicit robust model predictive control for urban Traffic network.*" *Road*, 30(112), pp.29-48, 2022.
5. **A. Karimpour**, A. M. Amani, M. Karimpour, and M. Jalili "Enhancing Voltage Regulation in DC Microgrids Using a Price Incentive Load Management Approach" *Iranian Journal of Electrical and Electronic Engineering*, Vol. 17, Issue 4, 2021.
6. **A. Karimpour**, H. Pourreza, M. Mirzavaziri, and A. Abbasi "Lessons from the Covid-19 epidemic in the educational planning of the faculty of engineering, Ferdowsi University of Mashhad" *Iranian Journal of Engineering Education*, Vol. 22, Issue 87, 2020.
7. H. Keshvari_Khor, **A. Karimpour**, N. Pariz, "Identification of Continuous-Time Switched Linear Systems from Low-Rate Sampled Data" *IET Control Theory and Application*, Available online: May 14 2018.
8. N. Noghredani, A. Riahi, N. Pariz and **A. Karimpour**, "The synchronization of fractional-order hyperchaos compound system," *Paranama Journal of Physics*, Feb 2018.
9. H. Torabi, Naser Pariz, and **A. Karimpour**, "A novel cubature statistically linearized Kalman filter for fractional-order nonlinear discrete-time stochastic systems," *Journal of Vibration and Control*, 2017.
10. K. Sokhanvar Mahani, **A. Karimpour**, N. Pariz, "Asymptotic Stability Analysis of Planar Switched Homogeneous Systems" *IMA Journal of Mathematical Control and Information*, Vol. 34, Issue 2, 2017.
11. S. Sabzevari, **A. Karimpour**, M. Monfared, and M.B. Naghibi Sistani, "MPPT control of wind turbines by direct adaptive fuzzy-PI controller and using ANN-PSO wind speed estimator" *Journal of Renewable and Sustainable Energy*, Vol. 9, Issue 1, 2017.
12. G. Mohammaddadi, N. Pariz and **A. Karimpour**, "Medial Kalman filter" *Asian Journal of Control*, Vol. 19, Issue 2, 2017.

13. K.S. Mahani, **A. Karimpour**, and N. Pariz, "Asymptotic stability analysis of planar switched homogeneous systems," *IMA Journal of Mathematical Control and Information*, Vol 34, Issue 2, 2017.
14. N. Vaezi, M. Khatibi, and **A. Karimpour**, "An Extended Linear MPC for Nonlinear Processes" *The Madares Journal of Electrical Engineering (MJEE)*, Vol. 16, No. 4, 2017.
15. Fayazi, N. Pariz, **A. Karimpour**, and H. Hossein Nia, "Robust Impedance Control of a Single-Link Flexible Robot Interacting with the Unknown Environment using Sliding Mode Control Method" *Journal of Control*, Vol. 11, No. 4, Winter 2017.
16. S. Afsharian, and **A. Karimpour**, "A Multiple Model Predictive Control for Maximum Energy Extraction from Variable Speed Wind Power Systems" *Computational Intelligence in Electrical Engineering*, Vol. 7, No. 1, 2016.
17. H. Torabi, N. Pariz, and **A. Karimpour**, "Kalman Filters for Fractional Discrete-time Stochastic Systems Along with Time-delay in the Observation Signal" *Eur. Phys. J.* Vol. 225, Issue 1, 2016.
18. S. Yasini, M-B. Naghibi-Sistani, and A. Karimpour, "Reinforcement learning and neural networks for multi-agent nonzero-sum games of nonlinear constraint systems," *International Journal of Machine Learning and Cybernetics* Vol. 7, Issue 6, 2016.
19. H. Torabi, N. Pariz, **A. Karimpour**, " Design for the Fractional Order Nonlinear Stochastic Systems with Student's t measurement Noise" *Journal of Control*, Vol. 10, No. 4, Winter 2016.
20. Pahnabi, A. Karimpour, Mostafa Mobara, "Control of Urban Traffic Network Based on Mixed Logical Dynamical Modeling and Constrained Predictive Control Approach" *International Journal of Scientific Engineering and Technology* Vol. 5, Issue 6, 2016.
21. M. Baluchzadeh, **A. Karimpour**, and N. Pariz, "Robust Optimal Control of Uncertain Nonlinear Switched System using Approximate Dynamic Programming" *The Madares Journal of Electrical Engineering (MJEE)*, Vol. 16, No. 4, 2016.
22. H. Molla-ahmadian, F. Tahami, **A. Karimpour**, and Naser Pariz, "Hybrid Control of DC–DC Series Resonant Converters: The Direct Piecewise Affine Approach" *IEEE Transactions on Power Electronics*, Vol. 30, No. 3, 2015.
23. S. Yasini, A. Karimpour, M-B.-Bagher Naghibi-Sistani, and H. Modarres, "Online Concurrent Reinforcement Learning Algorithm to Solve Two-player Zero-sum Games for Partially-unknown Nonlinear Continuous-time Systems" *International Journal of Adaptive Control and Signal Processing* , Vol. 29, 2015.
24. S. Yasini, M-B. Naghibi-Sistani, and A. Karimpour, "Approximate Dynamic Programming for Two-player Zero-sum Game Related to H_∞ Control of Unknown Nonlinear Continuous-time Systems" *International Journal of Control, Automation and Systems* Vol.13, No.1, 2015.
25. Kiumarsi, F-L. Lewis, M-B. Naghibi-Sistani and **A. Karimpour**, "Optimal Tracking Control of Unknown Discrete-Time Linear Systems Using Input–Output Measured Data" *IEEE Transactions on Cybernetics*, Vol. 45, No. 12, December 2015.

Selected Peer-reviewed Conference Paper

1. N. Bazmohammadi, **A. Karimpour**, S. Bazmohammadi, A. Anvari-Moghaddam, J. M. Guerrero, "An Efficient Decision-Making Approach for Optimum Energy Management of Microgrids" 13th IEEE PowerTech 2019, June 23-27 2019.
2. M. Baluchzadeh, **A. Karimpour**, and N. Pariz, "Robust Optimal Control of the Switching Reluctance Motor in the Presence of Uncertainties" Annual National Congress on New Research Ideas in Engineering Science, Technology, Electrical and Computer Science, May 5, 2018.

3. M. Baluchzadeh, **A. Karimpour**, and N. Pariz, "Discrete Linear Quadratic Control of Uncertain Switched System," 2017 5th International Conference on Control (ICCIA2017), Instrumentation and Automation, Sep 14, 2017.
4. S. Sadat Sajjadi, **A. Karimpour**, N. Pariz, and A. Jajarmi, "Design of Off-line NMPC by Extended Modal Series" 24th Iranian Conference on Electrical Engineering (ICEE 2016)
5. M. Baluchzadeh, **Ali Karimpour**, and N. Pariz, "Model Predictive Control of Uncertain Linear Switched System with External Input," 3rd International Congress on Computer, Electrical, and Communication, Oct. 2015.
6. M. Bigdeli, and **A. Karimpour**, " Obtaining Feasible Solution and Optimal Load Shedding in Contingency-constrained Unit Commitment Joint with Reserve Auction" 14th International Conference on Environment and Electrical Engineering (EEEIC 2014).
7. M. Bigdeli, and **A. Karimpour**, "Optimal Reserve Requirements and Units Schedule in Contingency Constrained Unit Commitment," 14th International Conference on Environment and Electrical Engineering (EEEIC 2014).
8. S. Afsari Bajestani, and **A. Karimpour**, "Maximum Power Point Tracking for Photovoltaic Array in Partial Shading Condition" 1st International Conference and Exhibition on Solar Energy (ICESE 2014).
9. S. Afsari Bajestani, and **A. Karimpour**, "Maximum Power Point Tracking for Photovoltaic Array in Partial Shading Condition by Power-Voltagr Curve" 1st International Conference and Exhibition on Solar Energy (ICESE 2014).
10. S. Ramyar, and **A. Karimpour**, "Sliding-Mode Control Based MPPT for PV Systems Under Non-Uniform Irradiation" 5th Power Electronics, Drives Systems & Technologies Conference (PEDSTC 2014).
11. S. Yasini, **A. Karimpour** and M.B. Naghibi Sistani, "Data-based Reinforcement Learning Algorithm with Experience Replay for Solving Constrained Nonzero-sum Differential Games" 21st International Symposium on Mathematical Theory of Networks and Systems July 7-11, 2014. Groningen, Netherlands.

SKILLS

- Programming Language: MATLAB
- Statistical Software: R, Python