

# Faezeh Farivar

## Associate Professor, Research Dean, IEEE Senior Member

Faculty of ECE, Science and Research Branch, Azad University (IAU), Tehran, Iran

## Representative of IEEE Women in Engineering (IEEE-WIE) Committee

IEEE-IRAN Section

## Director of Advanced Network Security Lab. in Cyber Physical Systems

<https://www.anslab.org>

**G-Scholar:** <https://scholar.google.com/citations?user=1AMWRgUYN1UC&hl=en>

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## RESEARCH/TEACHING INTERESTS

- Cyber Physical Systems (CPS)& CPS Security
- Machine Learning & Intelligent Systems
- Control Systems
- Mechatronics & Robotics

## EDUCATION

2007- 2011

- **Doctor of Philosophy (Ph.D.)**, Electrical Engineering, Major: Control & System Engineering, Science and Research Branch, Azad University (IAU), Iran, GPA=98.55/100.

2005- 2007

- **Master of Science**, Mechatronics Engineering, Science and Research Branch, Azad University (IAU), Iran, GPA=95.80/100.

2000- 2004

- **Bachelor of Science**, Electrical Engineering, Major: Biomedical Engineering, Bio-electrics, Science and Research Branch, Azad University (IAU), Iran, GPA=81.95/100.

## WORK EXPERIENCE

### ❖ Academia

Sep 2024-Present

- **Research Dean**, Faculty of Electrical and Computer Eng., Science and Research Branch, IAU, Iran.

Feb 2023-Feb 2025

- **Head of Department**, Dept. of Computer and Mechatronics Eng., Faculty of Electrical and Computer Eng., Science and Research Branch, IAU, Iran.

Jan 2022-Present

- **Associate Professor**, Dept. of Computer and Mechatronics Eng., Faculty of Electrical and Computer Eng., Science and Research Branch, IAU, Iran.

2016-Present

- **Director of Advanced Network Security Lab. (ANSLab) in Cyber Physical Systems**, School of Electrical and Computer Eng., University of Tehran, Iran. <https://www.anslab.org>

- 2011-2021**
- **Assistant Professor**, Dept. of Computer and Mechatronics Eng.,  
Faculty of Electrical and Computer Eng., Science and Research Branch, IAU, Iran.
- 2013-2014**
- **Post-Doctoral Fellow**, Fault Detection and Identification Research Lab (FDI Lab),  
Dept. of Control Eng., KN. Toosi University of Tech., Iran.
- 2011- 2012**
- **Post-Doctoral Fellow**, Research Institute of Robotics, Artificial Intelligence, and Information Science,  
School of Electrical and Computer Eng., University of Tehran, Iran.
- 2010-2011**
- **Lecturer**, Dept. of Computer & Mechatronics Eng., Science and Research Branch, IAU, Iran.
- 2009-2010**
- **Lecturer**, Dept. of Electrical & Computer Eng., Sama Branch, IAU, Tehran, Iran.
- 2006-2011**
- **Research Assistant**, Intelligent Systems Research Lab. (IS Lab), K. N. Toosi University of Tech., Iran.

#### ❖ **Industry**

- **Biomedical Engineer**,
  - Shariati Hospital, Tehran, Iran. **2001-2005**
  - Pars Nikou Afarid Co. Tehran, Iran. **2004-2005**
  - Tajhiz Teb Nour Co., Tehran, Iran. **2003-2004**
  - Jahan Gostaresh Tejarat Co., Tehran, Iran. **2002-2003**

### **TEACHING EXPERINCES**

- **Advanced Mechatronics (Mechatronics II)**, A 3-unit Postgraduate Course at IAU
- **Advanced Artificial Neural Networks**, A 3-unit Postgraduate Course at IAU
- **Modeling and Identification of Cyber-Physical Systems**, A 3-unit Postgraduate Course at IAU
- **Advanced Automatic Control**, A 3-unit Postgraduate Course at IAU
- **Nonlinear Control Systems**, A 3-unit Postgraduate Course at Science and Research Branch, IAU
- **Mechatronics**, A 3-unit Postgraduate Course at IAU
- **Research Techniques**, A 2-unit Postgraduate Course at IAU,
- **Engineering Mathematics**, A 3-unit Undergraduate Course at IAU
- **Differential Equations**, A 3-unit Undergraduate Course at IAU
- **Electronics Circuits-I**, A 3-unit Undergraduate Course at IAU
- **MATLAB Software**, A 2-unit Undergraduate Course at North Branch, IAU

### **SUPERVISION**

#### ❖ **Graduated**

- **Master students**, over 54 Master students at Dept. of Computer & Mechatronics Eng., IAU
- **PhD students**, 5 PhD students at Dept. of Computer & Mechatronics Eng., IAU

#### ❖ **On-going**

- **Master students**, 8 Master students at Dept. of Computer & Mechatronics Eng., IAU
- **PhD students**, 4 PhD students at Dept. of Computer & Mechatronics Eng., IAU

## **JOURNAL PUBLICATIONS**

1. S. Barchinezhad, MS. Haghighi, **F. Farivar**, A. Khonsari, "Enhancing the Resilience of Cyber-Physical Systems to DoS Attacks by Adopting Latency-Reducing TCP Variants", **IEEE Transactions on Dependable and Secure Computing**, submitted, May 2024. (IF=7.0)
2. Z. Li, Y. Ding, J. Li, **F. Farivar**, "Crowdsourcing Framework for Security Testing and Verification of Industrial Cyber-Physical Systems", **IEEE Network**, submitted, Sep. 2024. (IF=6.8)
3. MS. Haghighi; **F. Farivar**; A. Jolfaei, "A Machine Learning-based Approach to Build Zero False-Positive IPSs for Industrial IoT and CPS with a Case Study on Power Grids Security", **IEEE Transactions on Industry Applications**, Vol. 60, Issue 1, pp.920-928, 2024. (IF=4.079)
4. MS. Haghighi, **F. Farivar**, A. Jolfaei, A. Bayrami Asl., W. Zhou, "Cyber Attacks via Consumer Electronics: Studying the Threat of Covert Malware in Smart and Autonomous Vehicles", **IEEE Transactions on Consumer Electronics**, doi:10.1109/TCE.2023.3297965, 2023. (IF=4.3)
5. Z. Deng, Y. Hou, A. Jolfaei, W. Zhou, **F. Farivar**, MS. Haghighi, "Multihead Attention-Based Multiscale Graph Convolution Network for ITS Traffic Forecasting", **IEEE Systems Journal**, doi: 10.1109/JSYST.2023.3338265, 2023. (IF=4.4)
6. HA. Ghiassirad, **F. Farivar**, M. Aliyari Sh., "Building robust neural networks under adversarial machine learning attacks by using biologically-inspired neurons", **Information Sciences**, Vol. 645, pp. 119190, 2023. (IF=8.233)
7. **F. Farivar**, A. Jolfaei, M. Manthouri, MS. Haghighi, "Application of fuzzy learning in IoT-enabled remote healthcare monitoring and control of anesthetic depth during surgery", **Information Sciences**, Vol. 626, pp.262–274, 2023. (IF=8.233)
8. **F. Farivar**, MS. Haghighi, A. Jolfaei, S. Wen, "On the Security of Networked Control Systems in Smart Vehicle and its Adaptive Cruise Control", **IEEE Transactions on Intelligent Transportation Systems**, Vol. 22, Issue 6, pp. 3824 – 3831, 2021. (IF=6.492)
9. **F. Farivar**, MS. Haghighi, A. Jolfaei, S. Wen, "Covert Attacks through Adversarial Learning: Studying the Effect of Lane Keeping Attacks on the Safety of Autonomous Vehicles", **IEEE/ASME Transactions on Mechatronics**, Vol. 26, Issue 3, pp. 1350 – 1357, 2021. (IF=5.303)
10. **F. Farivar**, MS. Haghighi, A. Jolfaei, M. Alazab, "Artificial Intelligence for Detection, Estimation, and Compensation of Malicious Attacks in Nonlinear Cyber Physical Systems and Industrial IoT", **IEEE Transactions on Industrial Informatics**, Vol. 4, pp. 2716-2725, 2020. ("Chancellor's award for the best paper in engineering at the 8th IAU Scholars Festival, April 2021") & (Highly Cited Paper in WOS) (IF=10.215)
11. MS. Sadeghi G., **F. Farivar**, MS. Haghighi, A. Jolfaei, "Detection of Anomalies in Industrial IoT Systems by Data Mining: Study of Christ Osmotron Water Purification System", **IEEE Internet of Things Journal**, Vol. 8, Issue 13, pp. 10280 – 10287, 2021. (IF=9.471)
12. MS. Haghighi, A. Sheikhsafari, A. Jolfaei, **F. Farivar**, S. Ahmadzadeh, "Automation of Recording in Smart Classrooms via Deep Learning and Bayesian Maximum a Posteriori Estimation of Instructor's Pose", **IEEE Transactions on Industrial Informatics**, Vol. 17, Issue 4, pp. 2813 - 2820, 2021. (IF=10.215)
13. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Synchronization of Under-Actuated Unknown Heavy Symmetric Chaotic Gyroscopes via Optimal Gaussian Radial Basis Adaptive Variable Structure Control", **IEEE Transactions on Control Systems Technology**, Vol. 21, Issue 6, pp. 2374-2379, 2013. (IF=5.485)
14. A. Esfandiari, **F. Farivar**, H. Khaloozadeh, "Fractional-order Binary Bat Algorithm for Feature Selection on High-dimensional Microarray Data", **Journal of Ambient Intelligence and Humanized Computing**, Vol. 14, pp. 7453-7467, 2023. (IF=3.662)
15. A. Esfandiari, H. Khaloozadeh, **F. Farivar**, "Interaction-based Clustering Algorithm for Feature Selection: A Multivariate Filter Approach", **International Journal of Machine Learning and Cybernetics**, Vol. 14, pp.1769-1782, 2023. (IF= 4.377)

16. A. Esfandiari, H. Khaloozadeh, **F. Farivar**, "A scalable memory-enhanced swarm intelligence optimization method: fractional-order Bat-inspired algorithm", **International Journal of Machine Learning and Cybernetics**, doi: 10.1007/s13042-023-02022-1, 2023. (IF= 4.377)
17. MS. Haghighi, **F. Farivar**, A. Jolfaei, MH. Tadayon, "DoS-tolerant Control of Cyber-Physical Rotary Gantry Systems through Intelligent Control", **Journal of Supercomputing**, Vol. 76, pp. 3036-3085, 2020. (IF=2.474)
18. **F. Farivar**, M. Aliyari Sh., "Stability Analysis of Particle Dynamics in Gravitational Search Optimization Algorithm", **Information Sciences**, Vol. 337-338, pp. 25-43, 2016. (IF= 6.795)
19. **F. Farivar**, M. Aliyari Sh., M. Manthouri, "Improved Teaching-Learning based Optimization Algorithm using Lyapunov Stability Analysis", **Journal of Ambient Intelligence and Humanized Computing**, Vol.13, 3609-3618, 2022. (IF=7.104)
20. N. Shahabi Sani, M. Manthouri, **F. Farivar**, "A Multi-Objective Ant Colony Optimization Algorithm for Community Detection in Complex Networks", **Journal of Ambient Intelligence and Humanized Computing**, Vol. 11, pp. 5-21, 2020. (IF=7.104)
21. HA. Ghiassirad, M. Aliyari Sh., **F. Farivar**, "Application of Constrained Learning in Making Deep Networks More Transparent, Regularized, and Biologically Plausible", **Engineering Applications of Artificial Intelligence**, Vol. 85, pp. 421-428, 2019. (IF=6.212)
22. **F. Farivar**, M. Nili A., "Continuous Reinforcement Learning to Robust Fault Tolerant Control for a Class of Unknown Nonlinear Systems", **Journal of Applied Soft Computing**, Vol.37, pp. 702-714, 2015. (IF= 6.725)
23. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Chaos Control and Modified Projective Synchronization of Unknown Heavy Symmetric Chaotic Gyroscope Systems via Gaussian Radial Basis Adaptive Backstepping Control", **Journal of Nonlinear Dynamics** (Springer), Vol.12, No.3, pp.1913-1941, 2012. (IF=5.022)
24. **F. Farivar**, M. Aliyari Sh., "Fault Tolerant Synchronization of Chaotic Heavy Symmetric Gyroscope Systems versus External Disturbances via Lyapunov Rule-Based Fuzzy Control", **Journal of ISA Transactions**, Vol. 51, pp.50-64, 2012. (IF=5.468)
25. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Chaos Control and Generalized Projective Synchronization of Heavy Symmetric Chaotic Gyroscope Systems via Gaussian Radial Basis Adaptive Variable Structure Control", **Journal of Chaos, Solitons and Fractals**, Vol.45, pp.80-97, 2012. (IF=5.944)
26. **F. Farivar**, M. Aliyari Sh., M. Teshnehlal, "An Interdisciplinary Overview and Intelligent Control of Human Prosthetic Eye Movements System for the Emotional Support by a Huggable Pet-Type Robot from a Biomechatronic View Point", **Journal of Franklin Institute**, Vol. 349, pp. 2243-2267, 2012. (IF=4.504)
27. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Generalized projective synchronization of uncertain chaotic systems with external disturbance", **Journal of Expert Systems with Applications**, Vol.38, pp.4714-4726, 2011. (IF=6.954)
28. **F. Farivar**, M. Aliyari Sh., M. Teshnehlal, MA. Nekoui, "Modified Projective Synchronization of Unknown Chaotic Dissipative Gyroscope Systems via Gaussian Radial Basis Adaptive Variable Structure Control", **Journal of Vibration and Control**, Vol.19, No.4, pp.491-506, 2012. (IF=3.095)
29. **F. Farivar**, MA. Nekoui, M. Aliyari, M. Teshnehlal, "Modified Projective Synchronization of Chaotic Dissipative Gyroscope Systems via Backstepping Control", **Indian Journal of Physics** (Springer), Vol.86, 2012. (IF=1.947)
30. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Generalized Projective Synchronization for Chaotic Systems via Gaussian Radial Basis Adaptive Backstepping Control", **Journal of Chaos, Solitons and Fractals**, Vol.42, No.2, pp.826-839, 2009. (IF=5.944)
31. M. Amini, A. Tavakoli, M. Hosseinzadeh, **F. Farivar**, R. Bidaki, "The impact of in-air features on the diagnosis of developmental dysgraphia", **Journal of Intelligent & Fuzzy Systems**, Vol.44, pp. 1413-1424, 2023. (IF=1.737)

32. M. Amini, A. Tavakoli, M. Hosseinzadeh, **F. Farivar**, R. Bidaki, "Identifications of developmental dysgraphia on the basis of dynamic handwriting features", **International Journal of Nonlinear Analysis and Applications**, Vol.14, Issue 1, pp. 3179-3188, 2023.
33. H. Yektaei, M. Manthouri, **F. Farivar**, "Diagnosis of Breast Cancer Using Multi Scale Convolutional Neural Network", *Biomedical Engineering: Applications, Basis and Communications*, Vol. 31, No. 5, 2019.
34. **F. Farivar**, MA. Nekoui, M. Aliyari Sh., M. Teshnehlal, "Evolutionary Algorithms to Compute the Optimal Parameters of Gaussian Radial Basis Adaptive Backstepping Control for Chaotic Systems", *Universal Journal of Control and Automation*, Vol. 2, No. 1, pp. 25-31, 2014.
35. M. Rostami K., **F. Farivar**, M. Aliyari Sh., "Control of Flexible Joint Manipulator via Variable Structure Rule-Based Fuzzy Control and Chaos Anti-Control with Experimental Validation", *Journal of Intelligence Systems in Electrical Engineering*, 4th year, No. 4, pp.1-12, 2014.
36. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Generalized Projective Synchronization of Chaotic Heavy Gyroscope Systems Via Sliding Rule-Based Fuzzy Control", *Journal of ISRN Artificial Intelligence*, doi:10.5402/2012/576873, Vol. 2012, Article ID 576873, pp.1-10, 2012.
37. **F. Farivar**, M. Aliyari Sh., M. Teshnehlal, MA. Nekoui, "Chaos Control and Modified Projective Synchronization of Chaotic Dissipative Gyroscope Systems", *Journal of Energy and Power Engineering*, Vol.6, pp.90-100, 2012.
38. M. Rostami K, **F. Farivar**, M. Aliyari Sh., "Lyapunov Based Control of Flexible Joint Manipulator with Experimental Validation by Using Chaotic Gyroscope Synchronization", *International Journal of Mechanical Systems Engineering*, Vol.2, No.4, pp.169-175, 2012.
39. A. Saedian, H. Zarabadipour, M. Aliyari Sh., **F. Farivar**, "Fault Tolerant Control of Mechatronics System based on Hybrid Control", *International Journal of Physical Sciences*, Vol. 7, pp. 1949 - 1958, 2012.
40. M. Zamani P., M. Aliyari Sh., **F. Farivar**, M. Rostami K., "Hybrid Concepts of the Control and Anti-Control of Flexible Joint Manipulator", *International Journal of Robotics*, Vol.2, No.1, 2011.
41. **F. Farivar**, MA. Nekoui, M. Teshnehlal, M. Aliyari Sh., "Neural Sliding Mode Control for Chaos Synchronization of Uncertain Nonlinear Gyros", *Journal of Advances and Applications in Mathematical Sciences*, Mili publications, Vol.4, issue.1, pp.41-56, 2010.
42. **F. Farivar**, M. Aliyari Sh., M. Teshnehlal, MA. Nekoui, "Hybrid control of flexible manipulator", *Journal of Applied Sciences*, Vol.9, No.4, pp.639-650, 2009.
43. **F. Farivar**, M. Aliyari Sh., MA. Nekoui, M. Teshnehlal, "Gaussian radial basis adaptive backstepping control for a class of nonlinear control systems", *Journal of Applied Sciences*, Vol.9, pp.248-257, 2009.
44. **[Persian]** P. Rezaee, **F. Farivar**, M. Manthouri, "Fault-Tolerant Control of Wind Turbine Systems using Fuzzy Sliding Mode Control", *Journal of Modelling in Engineering*, Vol. 20, Issue 71, 2022.
45. **[Persian]** H.A. Ghiassirad, M. Aliyari Sh., **F. Farivar**, "Comparison of 21 constraints in a stochastic descending gradient algorithm using kernel methods", *Journal of Iranian Association of Electrical and Electronics Engineers*, Vol. 19, Issue 3, pp. 145-152, 2022.
46. **[Persian]** MS. Haghighi, **F. Farivar**, "Stability Analysis of Networked Control Systems under Denial-of-Service Attacks using Switching System Theory", *Journal of Information and Communication Technology*, Vol. 13, Issue 49, pp. 115 – 134, 2021.
47. **[Persian]** K. Ghaemi Osgouie, A. Haghighatpars, **F. Farivar**, "Task space path following for planar redundant robots using Pontryagin's principle in optimal control", *The Iranian Journal of Mechanical Engineering*, Vol. 22, Issue 1, No. 58, DOI: 10.30506/IJMEP.2020.90792.1441, 2020.

## **CONFERENCE PROCEEDINGS**

1. A. Bagheri, A. Brotzner, **F. Farivar**, et al., "Minsum m watchmen's routes in Stiegl polygons", **XX Spanish Meeting on Computational Geometry, Santiago de Compostela**, pp. 41-44, 2023.
2. **F. Farivar**, MS. Haghighi, S. Barchinezhad, A. Jolfaei, "Detection and Compensation of Covert Service-Degrading Intrusions in Cyber Physical Systems through Intelligent Adaptive Control", the **20th IEEE International Conference on Industrial Technology (ICIT)**, 2019.

3. M. Salehi, **F. Farivar**, "State Feedback Control Design of Cars Wings in Order to Improve Road-Holding on Corners of Roads", **the 5th Conference on Knowledge-Based Engineering and Innovation (IEEE-KBEI)**, 2019.
4. M. Salehi, M. Ahmadi, **F. Farivar**, "Model of car wing active control in order to increase stability of car on corners of road", **IEEE Int. Conf. on Automatic Control and Dynamic Optimization Tech.**, 2016.
5. **F. Farivar**, "Fault Tolerant Synchronization for a Class of Uncertain Chaotic Systems with Model Uncertainty and External Disturbances Using Fuzzy Sliding Mode Control", **the 9th Asian Control Conference**, 2013.
6. **F. Farivar**, H. Yaghini B., M.H. Kani, M. J. Yazdanpanah, M. Nili Ahmadabadi, "Comparing Energy Efficiency of Hopping Systems with Linear and Piecewise Linear Spring", **the 15th International Conference on Climbing and Walking Robots (CLAWAR 2012)**, Johns Hopkins University, 2012.
7. A. Saedian, H. Zarabadipour, M. Aliyari Sh., **F. Farivar**, "Inverted Pendulum Fault Tolerant Control Based on Fuzzy Backstepping Design and Anti-Control of Chaos", **the 3rd IFAC CHAOS Conference**, 2012.
8. **F. Farivar**, M. Aliyari Sh., M.A. Nekoui, M. Teshnehlal, "Chaos Synchronization for a Class of Chaotic Systems with Model Uncertainty and External Disturbances", **IEEE International Conference on Mechatronics**, 2011.
9. **F. Farivar**, M. Aliyari, "Fault Tolerant Synchronization of Chaotic Heavy Symmetric Gyroscope Systems via Gaussian RBF Neural Network Based on Sliding Mode Control", **IEEE Int. Conf. on Mechatronics**, 2011.
10. M. Rostami K., **F. Farivar**, M. Zamani P., M. Aliyari Sh., "Variable Structure Control and Anti-Control of Flexible Joint Manipulator with Experimental Validation", **IEEE International Conference on Mechatronics**, 2011.
11. **F. Farivar**, M. Rostami K., M. Aliyari Sh., "Intelligent Control of Human Prosthetic Eye Movements System for the Emotional Support by a Huggable Pet-Type Robot via Gaussian RBF Neural Network Based on Sliding Mode Control", **International Conf. on Control, Instrumentation, and Automation**, IEEE Indexed, 2011.
12. M. Zamani P., **F. Farivar**, M. Aliyari Sh., "Feedback Linearization and Chaotic Anti-Control of Flexible Joint Manipulator with Experimental Validation", **International Conference on Control, Instrumentation, and Automation**, IEEE Indexed, 2011.
13. M. Rostami K., **F. Farivar**, H. Moradi, "A Tethered Aerial Robot for Rescue Operations: Dynamic Modeling and Control", **the 1st RSI/ISM International Conference on Robotics and Mechatronics (ICRoM)**, 2013.
14. M. Rostami K., **F. Farivar**, M. Aliyari Sh., "Control and Anti-Control of Rotary Gantry via Gaussian Radial Basis Function Neural Networks by using Chaotic Gyroscope Synchronization", **the Iranian Conference on Chaos, Fractals and Complex Systems (CFCS)**, 2011.
15. N. Farzbod, H. Zarabadipour, M. Aliyari Sh., **F. Farivar**, "Sliding Adaptive Fuzzy Control for a Class of Time-Delayed Chaotic Systems", **IEEE International Conference on Fuzzy systems**, 2011.
16. N. Farzbod, H. Zarabadipour, M. Aliyari, **F. Farivar**, "Generalized Projective Synchronization of Time-Delayed Chaotic Systems via Sliding Adaptive Fuzzy Control", **IEEE International Conf. on Fuzzy systems**, 2011.
17. N. Farzbod, H. Zarabadipour, M. Aliyari Sh., **F. Farivar**, "Generalized Projective Synchronization of Time-Delayed Chaotic Systems via Sliding Adaptive Radial Basis Function Neural Network Control", **the 19th Iranian Conference on Electrical Engineering**, 2011.
18. **F. Farivar**, M. Aliyari Sh., M.A. Nekoui, M. Teshnehlal, "Chaos Synchronization of Uncertain Nonlinear Gyros via Hybrid Control", **IEEE/ASME International Conference on Advanced Intelligent Mechatronics**, 2009.
19. **F. Farivar**, M. Aliyari, M.A. Nekoui, M. Teshnehlal, "Sliding Mode Control of Flexible Joint Using Gaussian Radial Basis Function Neural Networks", **International Confe. on Computer and Electrical Engineering**, 2008.



## **PROJECTS & GRANTS**

- Design of Artificial Intelligence-Enabled Controllers for Detection and Compensation of Cyber Attacks in Cyber-Physical Systems, ***Institute for Research in Fundamental Science (IPM)***, Iran, 2024.
- Using Artificial Intelligence for Prevention and Resilience Improvement of Cyber Physical Systems against Adversarial Machine Learning-based Cyber Intrusions, ***Institute for Research in Fundamental Science (IPM)***, Iran, 2023.
- Increasing the Resilience of Cyber Physical Systems against Cyber Intrusions using Intelligent Robust Compensators, ***Institute for Research in Fundamental Science (IPM)***, Iran, 2022.
- Detection and Compensation of Adversarial Learning Cyber Intrusions to Smart and Autonomous Vehicles, ***Institute for Research in Fundamental Science (IPM)***, Iran, 2021.
- Detection, Estimation, and Compensation of Malicious Attacks in Cyber-Physical Systems using Intelligent Control Methods, ***Institute for Research in Fundamental Science (IPM)***, Iran, 2020.
- Research Sponsorship, ***Science and Research Branch of Tehran***, IAU, Iran, 2013.
- Machine Learning Approaches to Fault Tolerant Control Systems, Research Institute of Robotics, Artificial Intelligence, and Information Science, ***University of Tehran***, Iran, 2012.
- Hopping Systems with Linear and Piecewise Linear Springs, Research Institute of Robotics, Artificial Intelligence, and Information Science, ***University of Tehran***, Iran, 2011.
- Control of Chaotic Systems, ***Science and Research Branch of Tehran***, IAU, 2009.

## **PROFESSIONAL MEMBERSHIPS**

- **IEEE Senior Membership, 2020-Present**
- **IEEE Membership, 2014-Present**
- **Representative of Women in Engineering (WIE) Committee, IEEE, 2015-Present**  
<https://www.ieee.org.ir/committees/women-in-engineering/chair-members/>
- **Journals Editorial Board Membership, 2016-2019**  
IET - CAAI Transactions on Intelligence Technology,  
<https://web.archive.org/web/20181202162800/http://digital-library.theiet.org/journals/trit/editors>
- **Technical Program Committee Membership,**
  - 4<sup>th</sup> International Conference Intelligent Robotics and Applications (ICIRA), **2011**
  - IEEE Consumer life Tech Conference, **2024**

## **OTHER ACADEMIC CONTRIBUTIONS**

- **Reviewer/Referee of Journals**
  - IEEE Transactions on Systems, Man, and Cybernetics: Systems
  - IEEE Internet of Things Journal
  - IEEE Transactions on Intelligent Transportation Systems
  - IEEE Transactions on Fuzzy Systems
  - IEEE Transactions on Technology Control Systems
  - IEEE Sensors Journal
  - IEEE/ACM Transactions on Computational Biology and Bioinformatics
  - ACM Transactions on Internet Technology
  - Journal of ISA Transactions
  - Journal of Control, (IRAN)
- **WORKSHOP ORGANIZER**
  - Introduction to Mechatronics, Eslamshahr Branch, IAU, 16 Dec. 2011
  - Introduction to Mechatronics, Maybod Branch, IAU, 16 Dec. 2008
  - Fault Detection & Fault Tolerant Control, KN Toosi University of Technology, 2014

## **COMPUTER SKILLS**

- **General Software**

LaTeX, Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio

- **Advanced Software**

MATLAB, Paython, C, Pspice, Orcad, Electronic Work Bench, SPSS

## **REFERENCES**

- **Dr. Mohammad Sayad Haghighi**

Associate Professor & Head of IT Department

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- **Dr. Alireza Jolfaei**

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- **Prof. Sheng Wen**

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