

Curriculum Vitae

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EDUCATION:

Ph.D. Syracuse University, Syracuse, N.Y., U.S.A., 1996

M.Sc. Syracuse University, Syracuse, N.Y., U.S.A., 1989

B.S. Khajenasir Toosee University, Tehran, IRAN, 1986

EXPERIENCE:

Teaching Fall 1997 – present
FACULTY OF ELECTRICAL ENGINEERING, IRAN UNIVERSITY OF SCIENCE
AND TECHNOLOGY,

Professor: Teaching undergraduate and graduate courses: Linear Control
Systems, Signals and Systems, Electrical Engineering Softwares, Fuzzy Control, Neural
Networks, Robotics

Research Fall 1997 – present
FACULTY OF ELECTRICAL ENGINEERING, IRAN UNIVERSITY OF SCIENCE
AND TECHNOLOGY,

- Supervising and Cosupervising Ph.D. students' dissertation, Master students' thesis, and Bachelor students' project.
- Research contracts with industries and organizations:
 - Intelligent controllers of robot manipulators
 - Designing fuzzy controller for automotives
 - Application of fuzzy logic in refrigeration systems

PUBLICATIONS (Selected):

Journals:

- M.R. Rahmani and M. Farrokhi, "Identification of neuro-fractional Hammerstein systems: a hybrid frequency-/time-domain approach," *Soft Computing*, DOI 10.1007/s00500-017-2749-6, 2017.
- M. Sadeghi and M. Farrokhi, "Online identification of non-linear dynamic systems by Wiener model using subspace method and neural networks," *Transactions of the Institute of Measurement and Control*, DOI: 10.1177/0142331216663618, 2017.
- A. Kazemy and M. Farrokhi, "Synchronization of chaotic Lur'e systems with state and transmission line time delay: a linear matrix inequality approach," *Transactions of the Institute of Measurement and Control*, DOI: 10.1177/0142331216644497, 2017.
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- B. Vatankhah, M. Farrokhi, "Offset-free adaptive nonlinear model predictive control with disturbance observer for DC-DC buck converters," *Turkish Journal of Electrical Engineering & Computer Sciences*, vol. 25, pp. 2195-2206, 2017.
- R. Heydari and M. Farrokhi, "Robust model predictive control of biped robots with adaptive on-line gait generation," *International Journal of Control, Automation and Systems*, vol. 15, no. 1, pp. 329-344, 2017.
- H. Toshani, M. Farrokhi, and Y. Alipouri, "Constraint generalized minimum variance controller design using projection-based recurrent neural network," *IET Control Theory and Applications*, vol. 11, no. 2, pp. 143-154, 2016.
- S. Shakourzadeh and M. Farrokhi, "Optimal gait generation for quadruped robots using mesh adaptive direct search," *International Journal of Mathematical Modelling and Numerical Optimisation*, vol. 7, no.1, pp. 66-68, 2016.
- H. Moodi and M. Farrokhi, "Robust observer-based controller design for Takagi–Sugeno systems with nonlinear consequent parts," *Fuzzy Sets and Systems*, vol. 273, pp. 141-154, 2014.
- R. Heydari and M. Farrokhi, "Model Predictive Control of biped robot in up and down stairs based on neuro-adaptive predictor model," *Electronic Industries*. Vol. 6, no. 2, pp.51-65, 2014.
- H. Toshani and M. Farrokhi, "Real-time inverse kinematics of redundant manipulators using neural networks and quadratic programming: A Lyapunov-based approach," *Robotics and Autonomous Systems*, vol. 62, issue 6, pp. 761-771, 2014.
- H. Moodi and M. Farrokhi, "On observer-based controller design for Sugeno systems with unmeasurable premise variables," *ISA transactions*, vol. 53, no. 2, pp. 305-316, 2014.
- A. M. Jasour and M. Farrokhi, "Adaptive neuro-predictive control for redundant robot manipulators in presence of static and dynamic obstacles: A Lyapunov-based approach," *International Journal of Adaptive Control and Signal Processing*, vol. 28, issue 3-5, pp. 386-411, 2014.
- H. Moodi and M. Farrokhi, "Robust observer design for Sugeno systems with incremental quadratic nonlinearity in the consequent," *International Journal of Applied Mathematics and Computer Science*, vol. 23, no. 4, pp. 711-723, 2013.
- M. Jahed and M. Farrokhi, "Robust adaptive fuzzy control of twin rotor MIMO system," *Soft Computing*, vol. 17, no. 10, pp. 1847-1860, 2013.
- A. Kazemy and M. Farrokhi, "Delay-dependent robust absolute stability criteria for uncertain multiple time-delayed Lur'e systems," *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, vol. 227, no. 3, pp. 286-297, 2013.
- A. Kazemy and M. Farrokhi, "Robust absolute stability of multiple time-delay Lur'e systems with parametric uncertainties," *Asian Journal of Control*, vol. 15, no. 1, pp. 1-11, 2013.
- M. Shahriari and M. Farrokhi, "On-line state of health estimation of VRLA batteries using state of charge," *IEEE Transactions on Industrial Electronics*, vol. 60, no. 1, pp. 191-202, 2013.
- B. Torkaman and M. Farrokhi, "A Kalman-filter-based method for real-time visual tracking of a moving object using pan and tilt platform," *International Journal of Scientific and Engineering Research*, vol. 3, no. 8, pp. 1-6, 2012.
- M. Navvab Kashani, J. Aminian, S. Shahhosseini, and M Farrokhi, "Dynamic crude oil fouling prediction in industrial preheaters using optimized ANN based moving window technique," *Chemical Engineering Research and Design*, vol. 90, no. 7, pp. 938-949, 2012.

- H. Toshani and M. Farrokhi, "Inverse Kinematics of 7-DOF Robot Manipulator under joint position constraints and obstacles in workspace using neuro-fuzzy network and second-order programming method," *Journal of Control*, vol. 6, no. 2, pp. 23-37, 2012. (in Persian)
- S.M. Hoseini and M. Farrokhi, "Free chattering fuzzy sliding mode controllers to robotic tracking problem," *International Journal of Advanced Design and Manufacturing Technology*, vol. 5, no. 2, pp. 59-70, 2012.
- M. Parsa and M. Farrokhi, "Robust trajectory-free model predictive control of biped robots with adaptive gait length," *International Journal of Robotics*, vol. 2, no. 1, pp. 46-55, 2011.
- M. Hajatipour and M. Farrokhi, "Increasing accuracy in nonlinear sliding-mode observers without decreasing sampling time using frequency domain analysis," *Journal of Mathematical Control and Information*, vol. 29, no.1, pp. 1-22, 2011.
- A. Badkoobeh and M. Farrokhi, "An adaptive approach for optimal path planning of unmanned aerial vehicles," *International Journal of Mathematical Modelling and Numerical Optimisation*, vol. 2, no. 4, pp. 422-440, 2011.
- A. Badkoobeh and M. Farrokhi, "Waypoint tracking of unmanned aerial vehicles using robust H_2/H_∞ controller," *International Journal of Systems, Control and Communication*, vol. 3, no. 4, pp. 357-376, 2011.
- S. M. Hoseini, M. Farrokhi, A. Koshkouei, "Robust adaptive control of non-linear non-minimum phase systems with uncertainties," *Automatica*, vol. 47, issue 2, pp. 348-357, 2011.
- A. Kazemy and M. Farrokhi, "Line-of-sight stabilization of submarine periscopes," *Journal of Control*, vol. 4, no. 1, pp. 1-11, 2010. (in Persian)
- O. Seyyed-Mosavi and M. Farrokhi, "Optimal fuzzy adaptive controller design for manipulators with flexible links," *Journal of Electrical Engineering of Tabriz University*, vol. 39, no. 2, pp. 49-60, 2010. (in Persian)
- M. Charkhgard and M. Farrokhi, "State of charge estimation for lithium-ion batteries using neural networks and extended Kalman filter," *IEEE Transactions on Industrial Electronics*, vol. 57, no. 12, pp. 4178-4187, 2010.
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- M. Hajatipour and M. Farrokhi, "Chattering free with noise reduction in sliding-mode observers using frequency domain analysis," *Journal of Process Control*, vol. 20, issue 8, pp. 912-921, 2010.
- S. Mohammad-Hoseini, M. Farrokhi, and A. J. Koshkouei, "Adaptive neural network output feedback stabilization of nonlinear non-minimum phase systems," *International Journal of Adaptive Control and Signal Processing*, vol. 24, no. 1, pp. 65-82, 2010.
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- S. A. Hosseini and M. Farrokhi, "New steady-state Kalman filter for tracking high maneuvering targets," *Journal of Control*, vol. 2, no. 2, pp. 1-7, Winter 2009.
- A. Alfi and M. Farrokhi, "Hybrid state-feedback sliding-mode controller design using fuzzy logic for four-wheel-steering vehicles," *Vehicle System Dynamics*, vol. 47, no. 3, pp. 265-284, March 2009.

- A. Alfi and M. Farrokhi, "A simple structure for bilateral transparent teleoperation systems with time delay," *ASME Journal of Dynamic Systems, Measurement, and Control*, vol. 130, no. 4, December 2008.
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- S. Mohammad-Hoseini, M. Farrokhi, and A. J. Koshkouei, "Robust adaptive control of uncertain non-linear systems using neural networks," *International Journal of Control*, vol.81, no. 8, pp. 1319-1330, August 2008.
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Conferences:

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- Z. Sinaeefar and M. Farrokhi, "Adaptive fuzzy predictive hybrid position/velocity control of nonholonomic wheeled mobile robots," *11th Iranian Conference on Fuzzy Systems*, Zahedan, Iran, 2011.
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- M. Parsa and M. Farrokhi, "Trajectory-free NMPC-based control of 5-link biped robots with adaptive foot positioning," *International Conference on Control, Instrumentation and Automation*, Tehran, Iran, 2010.
- H. Torab and M. Farrokhi, Error reduction of 2-DOF gimbal gyros using LQG/LTR controller," *International Conference on Control, Instrumentation and Automation*, Tehran, Iran, 2010.

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- A. M. Jasour and M. Farrokhi, "Adaptive neuro-NMPC control of redundant robotic manipulators for path tracking and obstacle avoidance," *European Control Conference*, Budapest, Hungary, 2009.
- A. M. Jasour and M. Farrokhi, "Obstacle avoidance and grasping moving objects in non-stationary environments for redundant robot manipulators using NMPC," *17th Iranian Conference on Electrical Engineering*, Tehran, Iran, 2009.
- M. Gorji Sefidmazgi and M. Farrokhi, "Online calibration of inertial sensors using Kalman filters and artificial neural networks," *17th Iranian Conference on Electrical Engineering*, Tehran, Iran, 2009.
- S. M. Hoseini and M. Farrokhi, "Output-feedback stabilization of nonlinear non-minimum phase systems using neural network," *5th International Symposium on Mechatronics and its applications*, Amman, Jordan, 2008.
- A. Kazemy and M. Farrokhi, "Modeling and hybrid intelligent control of submarine periscope," *7th Iranian Conference on Aerospace Engineering*, Tehran, Iran, 2008.
- M. Gorji and M. Farrokhi, "Sensor fusion of GPS and inertial navigation data using neural networks," *7th Iranian Conference on Aerospace Engineering*, Tehran, Iran, 2008. (in Persian)
- A. Badkoobeh and M. Farrokhi, "A novel algorithm for UAV path planning of terrain following flight," *7th Iranian Conference on Aerospace Engineering*, Tehran, Iran, 2008. (in Persian)
- S. M. Hoseini and M. Farrokhi, "Adaptive stabilization of non-minimum phase nonlinear systems using neural networks," *9th IFAC Workshop on Adaptation and Learning in Control and Signal Processing*, St. Petersburg, Russia, 2007.
- S. M. Hoseini, M. Farrokhi, and A. J. Koshkouei, "Adaptive output feedback control of nonlinear non-minimum phase systems using neural networks," *International Conference on Systems Science*, Wroclaw, Poland, 2007.
- A. Kazemi, S. A. Hosseini, and M. Farrokhi, "Target-based line-of-site stabilization in periscopes," *IEEE Mediterranean Conference on Control and Automation*, Athens, Greece, 2007.
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- A. Badkoobeh and M. Farrokhi, "Modelling and inverse neuro-control for terrain following flight using RBF network," *15th Annual (International) Conference on Mechanical Engineering*, Tehran, Iran, 2007. (in Persian)
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- A. Kazemy and M. Farrokhi, "Image stabilization in submarine periscopes against sea wave movement," *6th Iranian Conference on Aerospace Engineering*, Tehran, Iran, 2007. (in Persian)
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- M. Forghani and M. Farrokhi, "Altitude estimation of LEO satellites using neural networks," *6th Iranian Conference on Aerospace Engineering*, Tehran, Iran, 2007. (in Persian)
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