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Education

- ◆ B.S., Electrical Engineering, University of Tehran, Tehran, IRAN, 1984 – 1988.
- ◆ M.S., Electrical Engineering, University of Pittsburgh, Pittsburgh, PA, USA, 1989 - 1991.
- ◆ Ph.D., Electrical Engineering, University of Pittsburgh, Pittsburgh, PA, USA, 1991 - 1995.

Research Interests

- Neural networks and deep learning, reinforcement learning, intelligent identification and control, ingestible capsule robots, soft robots, neuro-fuzzy control, multi-agent learning, cooperative control, formation control.

Authored Books

- ◆ Tunnel Intelligent Control Systems, Transportation Research Center, Ministry of Road and Transportation, ISBN: 987-964-6299-97-9 (2007).
- ◆ A. Razminia, V.J. Majd, A. Feiz Dizaji, *A Note on the Sequential Linear Fractional Dynamical Systems from the Control System Viewpoint and L^2 -Theory*, A book chapter in: Fractional Dynamics and Control, Springer, New York, ISBN 978-1-4614-0456-9, (2012). [Abstract](#)

Selected Journal Papers

- 1- H. Zamani, K. Khandani, V.J. Majd, *Fixed-time sliding-mode distributed consensus and formation control of disturbed fractional-order multi-agent systems*, ISA Transactions, vol. 138, no. 1, pp 37–48 (2023). [Abstract](#)
- 2- H. Zamani, K. Khandani, V.J. Majd, *Formation tracking control of fractional-order multi-agent systems with fixed-time convergence*, Journal of Systems and Control Engineering, IMechE, vol. 236, no. 9, pp 1618–1629 (2022). [Abstract](#)
- 3- Y. Farid, V.J. Majd, A. Ehsani-Seresht, *Dynamic-free robust adaptive intelligent fault-tolerant controller design with prescribed performance for stable motion of quadruped robots*, Adaptive Behavior, vol. 29, no. 3, pp 233–252 (2021). [Abstract](#)
- 4- M. Parvizian, K. Khandani, V.J. Majd, *An H_∞ non-fragile observer-based adaptive sliding mode controller design for uncertain fractional-order nonlinear systems with time delay and input nonlinearity*, Asian Journal of Control, vol. 23, no. 1, pp. 423-431 (2021). [Abstract](#)
- 5- A. Hafezi, K. Khandani, V.J. Majd, *Non-fragile exponential polynomial observer design for a class of nonlinear fractional-order systems with application in chaotic communication and synchronisation*, International Journal of Systems Science, vol. 51, no. 8, pp. 1353-1372 (2020). [Abstract](#)
- 6- M. Siavash, V.J. Majd, M. Tahmasebi, *Finite-Time Consensus Control of Euler-Lagrange Multi-agent Systems in the Presence of Stochastic Disturbances and Actuator Faults*, Journal of Electrical and Computer Engineering Innovations (JECEI), vol. 7, no. 2, pp. 163-170 (2019). [Abstract](#)
- 7- M. Siavash, V.J. Majd, M. Tahmasebi, *A practical finite-time back-stepping sliding-mode formation controller design for stochastic nonlinear multi-agent systems with time-varying weighted topology*, International Journal of Systems Science, vol. 51, no. 3, pp. 488-506 (2020). [Abstract](#)
- 8- M. Siavash, V.J. Majd, M. Tahmasebi, *Fault-tolerant formation control of stochastic nonlinear multi-agent systems with time-varying weighted topology*, Transactions of the Institute of Measurement and Control, vol. 42, no. 8, pp. 1461-1474 (2020). [Abstract](#)
- 9- M. Parvizian, K. Khandani, V.J. Majd, *A non-fragile observer-based adaptive sliding mode control for fractional-order Markovian jump systems with time delay and input nonlinearity*, Transactions of the Institute of Measurement and Control, Vol. 42, no. 8, pp. 1448-1460 (2020). [Abstract](#)
- 10- A. Javaheri, V.J. Majd, *Switching fuzzy modelling and control scheme using T-S fuzzy systems with nonlinear consequent parts*, Iranian Journal of Fuzzy Systems, vol. 17, no. 2, pp. 49-65 (2020). [Abstract](#)
- 11- N. Dini, V.J. Majd, *Sliding-Mode Tracking Control of a Walking Quadruped Robot with a Push Recovery Algorithm Using a Nonlinear Disturbance Observer as a Virtual Force Sensor*, Iranian Journal of Science and Technology - Transactions of Electrical Engineering, Vol. 44, no. 3, pp. 1033-1057 (2020). [Abstract](#)

- 12- N. Dini, V.J. Majd, *An MPC-based two-dimensional push recovery of a quadruped robot in trotting gait using its reduced virtual model*, Mechanism and Machine Theory, vol. 146, no. 1, Article number 103737, pp. 2-25 (2020). [Abstract](#)
- 13- M. Attar, V.J. Majd, N. Dini, Analysis and Design of a Time-Varying Extended State Observer for a Class of Nonlinear Systems with Unknown Dynamics Using Spectral Lyapunov Function, Journal of Intelligent & Robotic Systems, vol. 94, no. 2, pp. 405-421 (2018). [Abstract](#)
- 14- B. Shahriari, V.J. Majd, H. Moradi, *Robust Control of Uncertain Nonlinear Switched Systems: A Dissipativity-Based Integral Sliding Mode Control Redesign Approach*, Iranian Journal of Science and Technology, Transactions of Electrical Engineering, vol. 43, no. 1, pp. 325-337 (2019). [Abstract](#)
- 15- M. Moattari, V.J. Majd, *Cooperative Fusion for Distributed Estimation of Target Position in Heterogeneous Networks with Communication Delays*, Iranian Journal of Science and Technology, Transactions of Electrical Engineering, vol. 43, no. 1, pp. 201-210 (2019). [Abstract](#)
- 16- Y. Farid, V.J. Majd, A. Ehsani-Seresht, *Observer-based robust adaptive force-position controller design for quadruped robots with actuator faults*, International Journal of Adaptive Control and Signal Processing, vol. 32, no. 10, pp. 1453-1472 (2018). [Abstract](#)
- 17- M. Moattari, V.J. Majd, Local node cooperative estimation of stochastic systems using a switching network of heterogeneous sensors with communication delay, Information Sciences, vol. 450, no. 1, pp. 157-168 (2018). [Abstract](#)
- 18- Y. Farid, V.J. Majd, A. Ehsani-Seresht, Fractional-order active fault-tolerant force-position controller design for the legged robots using saturated actuator with unknown bias and gain degradation, Mechanical Systems and Signal Processing, vol. 104, no. 1, pp. 465-486 (2018). [Abstract](#)
- 19- K. Khandani, V.J. Majd, M. Tahmasebi, Robust stabilization of uncertain time-delay systems with fractional stochastic noise using the novel fractional stochastic sliding approach and its application to stream water quality regulation, IEEE Transactions on Automatic Control, vol. 62, no. 4, pp. 1742-1751 (2017). [Abstract](#)
- 20- K. Khandani, V.J. Majd, M. Tahmasebi, Integral sliding mode control for robust stabilization of uncertain stochastic time-delay systems driven by fractional Brownian motion, International Journal of Systems Science, vol. 48, no. 4, pp. 828-837 (2017). [Abstract](#)
- 21- H. Moradi, V.J. Majd, *Robust Control of Uncertain Nonlinear Switched Genetic Regulatory Networks with Time Delays: A Redesign Approach*, Mathematical Biosciences, vol. 275, pp. 10-17 (2016). [Abstract](#)
- 22- H. Moradi, V.J. Majd, *A dissipative integral sliding mode control redesign method for uncertain nonlinear switched systems*, Iranian Journal of Electrical and Electronic Engineering, vol. 11, no. 4, pp. 310-318 (2015). [Abstract](#)
- 23- K. Khandani, V.J. Majd, M. Tahmasebi, *Comments on Solving nonlinear stochastic differential equations with fractional Brownian motion using reducibility approach*, Nonlinear Dynamics, Springer, vol. 82, no 3, pp 1605-1607 (2015). [Abstract](#)
- 24- S. Shams, M. Monjezi, V.J. Majd, D.J. Armaghani, *Application of fuzzy inference system for prediction of rock fragmentation induced by blasting*, Arabian Journal of Geosciences, Springer, vol. 8, no 12, pp. 10819-10832 (2015). [Abstract](#)
- 25- M.H. Asemani, V.J. Majd, *A Novel Descriptor Redundancy Approach for Non-Quadratic Robust H_∞ Control of T-S Fuzzy Nonlinear Singularly Perturbed Systems*, Journal of Intelligent and Fuzzy Systems, vol. 29, no. 1, pp. 15-26 (2015). [Abstract](#)
- 26- M.H. Asemani, V.J. Majd, A Robust H_∞ Tracking Design for Uncertain Takagi–Sugeno Fuzzy Systems with Unknown Premise Variables Using Descriptor Redundancy Approach, International Journal of Systems Science, vol. 46, no. 16, pp. 2955-2972 (2015). [Abstract](#)
- 27- M.H. Asemani, V.J. Majd, *A Robust H_∞ Non-PDC Design Scheme for Singularly-perturbed T-S Fuzzy Systems with Immeasurable State Variables*, IEEE Transactions on Fuzzy Systems, vol. 23, no 3, pp 525-541 (2015). [Abstract](#)
- 28- V.J. Majd, S. Mobayen, An ISM-Based CNF Tracking Controller Design for Uncertain MIMO Linear Systems with Multiple Time-Delays And External Disturbances, Nonlinear Dynamics, Springer, vol. 80, no 1-2, pp 591-613 (2015). [Abstract](#)
- 29- H. Moradi, V.J. Majd, *Dissipativity-Based Stable Controller Redesign for Nonlinear MIMO Switched Systems in the Presence of Perturbations*, Nonlinear Dynamics, Springer, vol. 75, no. 4, pp. 769-781 (2014). [Abstract](#)
- 30- M. Monjezi, S.M. Hashemi-Rizi, V.J. Majd, M. Khandelwal, *Artificial Neural Network as a Tool for Backbreak Prediction*, International Journal of Geotechnical and Geological Engineering, Springer, vol. 32, no. 1, pp. 21-30 (2014). [Abstract](#)
- 31- M.H. Asemani, M.J. Yzadanpanah, V.J. Majd, A. Golabi, *H_∞ Control of T-S Fuzzy Singularly Perturbed Systems Using Multiple Lyapunov Functions*, Journal of Circuits, Systems, and Signal processing, Springer, vol. 32, no. 5, pp. 2243-2266 (2013). [Abstract](#)
- 32- H. Kazemi, V.J. Majd, M.M. Moghaddam, *Modeling and Robust Backstepping Control of an Under-Actuated Quadruped Robot in Bounding Motion*, Robotica, Cambridge, vol. 31, no. 3, pp. 423-439 (2013). [Abstract](#)
- 33- A. Razminia, D. Baleanu, V.J. Majd, *Conditional Optimization Problems: Fractional Order Case*, Journal of Optimization Theory and Applications, Springer, vol. 156, no. 1, pp. 45-55 (2013). [Abstract](#)
- 34- M.H. Asemani, V.J. Majd, *A Robust H_∞ Observer-based Controller Design for Uncertain T-S Fuzzy Systems with Unknown Premise Variables via LMI*, Fuzzy Sets and Systems, Elsevier, vol. 212, pp. 21-40 (2013). [Abstract](#)

- 35- H. Mobarrami, M. Behfard, V.J. Majd, *The Effect of Fuzzy Uncertainties on Performance Level and Performance Evaluation of Steel Moment Frames*, Journal of Seismology & Earthquake Engineering, vol. 14, no. 1, pp 39-55 (2012). [Abstract](#)
- 36- S. Mobayen, V.J. Majd, M. Sojoodi, *An LMI-Based Composite Nonlinear Feedback Terminal Sliding-Mode Controller Design for Disturbed MIMO Systems*, Mathematics and Computers in Simulation, Elsevier, vol. 85, no. 1, pp. 1-10 (2012). [Abstract](#)
- 37- M. Sojoodi, V.J. Majd, *A Robust Resilient Multi-Objective Delay-Dependent Tracker for Nonlinear Time-Delay Systems*, Journal of Circuits, Systems, and Signal processing, Springer, vol. 31, no. 6, pp. 1951-1971 (2012). [Abstract](#)
- 38- S. Mobayen, V.J. Majd, *Robust Tracking Control Method Based on Composite Nonlinear Feedback Technique for Linear Systems with Time-Varying Uncertain Parameters and Disturbances*, Nonlinear Dynamics, Springer, vol. 70, no. 1, pp. 171-180 (2012). [Abstract](#)
- 39- A. Razminia, V.J. Majd, A. Feiz Dizaji, *An Extended Formulation of Calculus of Variations for Incommensurate Fractional Derivatives with Fractional Performance Index*, Nonlinear Dynamics, Springer, vol. 69, no. 3, pp. 1263-1284 (2012). [Abstract](#)
- 40- A. Razminia, A. Feiz Dizaji, V.J. Majd, *Solution Existence for Non-Autonomous Variable-Order Fractional Differential Equations*, Mathematical and Computer Modelling, Elsevier, vol. 55, no. 3-4, pp. 1106-1117 (2012). [Abstract](#)
- 41- M. Pourgholi, V.J. Majd, *A Novel Robust Proportional-Integral (PI) Adaptive Observer Design for Chaos Synchronization*, Chinese Physics B, vol. 20, no. 12, pp. 120503.1-7 (2011). [Abstract](#)
- 42- S. Yousefi, M. Parsa, V.J. Majd, *Agent-Based Modeling of Day-Ahead Real Time Pricing in a Pool-Based Electricity Market*, The Iranian Journal of Electrical & Electronic Engineering (IJEET), vol. 7, no. 3, pp. 203-212 (2011). [Abstract](#)
- 43- M. Pourgholi, V.J. Majd, *A Nonlinear Adaptive Resilient Observer Design for a Class of Lipschitz Systems using LMI*, Journal of Circuits, Systems, and Signal processing, Springer, vol. 30, no. 6, pp. 1401-1415 (2011). [Abstract](#)
- 44- S. Yousefi, M. Parsa, V.J. Majd, *Optimal Real Time Pricing in an Agent-Based Retail Market Using a Comprehensive Demand Response Model*, Energy, Elsevier, vol. 36, no. 9, pp. 5716-5727 (2011). [Abstract](#)
- 45- A. Razminia, V.J. Majd, D. Baleanu, *Chaotic Incommensurate Fractional Order Rössler System: Active Control and Synchronization*, Advances in Difference Equations, SpringerOpen, vol. 2011, no.15, pp. 1-12 (2011). [Abstract](#)
- 46- S. M. Mousavi, V.J. Majd, *Robust Filtering of Extended Stochastic Genetic Regulatory Networks with Parameter Uncertainties, Disturbances, and Time-Varying Delays*, Neurocomputing, Elsevier, vol. 74, no. 12-13, pp. 2123-2134 (2011). [Abstract](#)
- 47- H. Kebriaci, A.R. Kian, V.J. Majd, *An Agent-Based System for Bilateral Contracts of Energy*, Expert Systems with Applications, Elsevier, , vol. 38, no. 9, pp. 11369-11376 (2011). [Abstract](#)
- 48- A. Salimpour, V.J. Majd, M. Sojoodi, *Comment on: Robust Stability of Stochastic Genetic Regulatory Networks with Discrete and Distributed Delays*, Soft Computing, Springer, vol. 15, no. 4, pp. 769-770 (2011). [Abstract](#)
- 49- E. Khanmirza, N. Khaji, V.J. Majd, *Model Updating of Multistory Shear Buildings for Simultaneous Identification of Mass, Stiffness and Damping Matrices Using Two Different Soft-Computing Methods*, Expert Systems with Applications, Elsevier, vol. 38, no. 5, pp. 5320-5329 (2011). [Abstract](#)
- 50- M. Pourgholi, V.J. Majd, *A New Nonfragile H-infinity PI-Filtered-Error Adaptive Observer for a Class of Nonlinear Systems and its Application to Synchronous Generators*, Journal of Systems and Control Engineering, IMechE, Vol. 225, no. 1, p.p. 99-112 (2011). [Abstract](#)
- 51- M. Faraji, V.J. Majd, B. Saghaei, M. Sojoodi, *An Optimal Pole-Matching Observer Design for Estimating Tyre-Road Friction Force*, Vehicle System Dynamics, Vol. 48, no. 10, p.p. 1155-1166 (2010). [Abstract](#)
- 52- H. Kamalinejad, V.J. Majd, H. Kebriaci, A.R. Kian, *Cournot Games with Linear Regression Expectations in Oligopolistic Markets*, Mathematics and Computers in Simulation, Elsevier, vol. 80, no. 9, pp. 1874-1885 (2010). [Abstract](#)
- 53- V. Derhami, V.J. Majd, M. Nili *Exploration and Exploitation Balance Management in Fuzzy Reinforcement Learning*, Fuzzy Sets and Systems, Elsevier, vol. 161, no. 4, pp. 578-595 (2010). [Abstract](#)
- 54- A. Moarefianpour, V.J. Majd, *Input-to-State Stability in Congestion Control Problem of Computer Networks with Nonlinear Links*, International Journal of Innovative Computing, Information and Control (IJICIC), vol. 5, no. 8, pp. 2091-2105 (2009). [Abstract](#)
- 55- M.H. Asemani, V.J. Majd, *Stability of Output-Feedback DPDC-Based Fuzzy Synchronization of Chaotic Systems via LMI*, Chaos, Solitons and Fractals, Elsevier, vol. 42, no. 3, pp. 1126-1135 (2009). [Abstract](#)
- 56- A.A. Ahmadi, V.J. Majd, *Robust Synchronization of a Class of Uncertain Chaotic Systems*, Chaos, Solitons and Fractals, Elsevier, vol. 42, no. 2, pp. 1092-1096 (2009). [Abstract](#)
- 57- S. Dadras, H.R. Momeni, V.J. Majd, *Sliding mode Control for Uncertain New Chaotic Dynamical System*, Chaos, Solitons and Fractals, Elsevier, vol. 41, no. 4, pp. 1857-1862 (2009). [Abstract](#)
- 58- K. Mohammadi, R. Niknam, V.J. Majd, *Aquifer vulnerability Assessment Using GIS and Fuzzy System: A Case Study in Tehran-Karaj Aquifer, Iran*, Environmental Geology, Springer, vol. 58, no. 2, pp. 437-446 (2009). [Abstract](#)

- 59- N. Vasegh, V.J. Majd, *Fuzzy Model-Based Adaptive Synchronization of Time-Delayed Chaotic Systems*, Chaos, Solitons and Fractals, Elsevier, vol. 40, no. 3, pp. 1484-1492 (2009). [Abstract](#)
- 60- H. Kebriaci, V.J. Majd, *A Simultaneous Multi-Attribute Soft-Bargaining Design for Bilateral Contracts*, Expert Systems with Applications, Elsevier, vol. 36, no. 3, Part 1, pp. 4417-4422 (2009). [Abstract](#)
- 61- A.A. Ahmadi, V.J. Majd, *GCS of a Class of Chaotic Dynamic Systems with Controller Gain Variations*, Chaos, Solitons and Fractals, Elsevier, vol. 39, no. 3, pp. 1238-1245 (2009). [Abstract](#)
- 62- A. Yaghoti, M. Parsa, M.R. Haghifam, V.J. Majd, *Load Estimation Of Distribution Networks Using Inverse PCA*, Amirkabir Journal of Science & Technology, vol. 18, no. 67, pp. 25-33 (2008). [Abstract](#)
- 63- M. Pourgholi, V.J. Majd, M.R. Aghamohammadi, M. Montazer-Ghaem *Gas Unit Synchronous Generator's Parameters Identification Using SSFR Tests*, International Journal of Mathematical Models and Methods in Applied Sciences, vol. 2, no. 3, pp. 423-431 (2008). [Abstract](#)
- 64- J. Razavi-Panah, V.J. Majd, *A Robust Multi-Objective DPDC for Uncertain T-S Fuzzy Systems*, Fuzzy Sets and Systems, Elsevier, vol. 159, no. 20, pp. 2749-2762 (2008). [Abstract](#)
- 65- V. Derhami, V.J. Majd, M. Nili, *Fuzzy Sarsa Learning and the Proof of Existence of its Stationary Points*, Asian Journal of Control, John Wiley InterScience, vol. 10, no. 5, pp. 535-549 (2008). [Abstract](#)
- 66- H. Kebriaci, V.J. Majd, A.R. Kian, *A New Agent Matching Scheme Using an Ordered Fuzzy Similarity Measure and Game Theory*, Computational Intelligence, vol. 24, no. 2, pp. 108-121 (2008). [Abstract](#)
- 67- A. Bazaei, V.J. Majd, *An Alternative Way to Test the Criteria Ensuring the Existence of Discrete-Time Normal Form*, Systems & Control Letters, Elsevier, vol. 56, no. 4, pp. 315-319 (2007). [Abstract](#)
- 68- N. Jafarnia Dabanloo, A. Ayatollahi, V.J. Majd, *A Modified Zeeman Model for Producing HRV Signals and its Application to ECG Signal Generation*, Journal of Theoretical Biology, Elsevier, vol. 244, no. 2, pp. 180-189 (2007). [Abstract](#)
- 69- A. Bazaei, V.J. Majd, *Application of Affine Gray-Box Neural Models for Nonlinear Control of Chemical Processes*, Iranian Journal of Chemical Engineering, Iranian Association of Chemical Engineers (IACHE), vol. 3, no. 1, pp. 65-76 (2006). [Abstract](#)
- 70- N. Vasegh, V.J. Majd, *Adaptive Fuzzy Synchronization of Discrete-Time Chaotic Systems*, Chaos, Solitons and Fractals, Elsevier, vol. 28, no. 4, pp. 1029-1036 (2006). [Abstract](#)
- 71- V.J. Majd, A. Bazaei, *Neuro-Adaptive Friction Compensation for Single-Link Flexible Robots using Serial-Gray-Box Modeling Strategy*, Journal of Dynamic Systems, Measurement and Control, ASME, vol. 128, no. 2, pp. 297-306 (2006). [Abstract](#)
- 72- N. Jafarnia Dabanloo, A. Ayatollahi, V.J. Majd, *A Comprehensive Model Using Modified Zeeman Model for Generating ECG Signals*, Iranian Journal of Electrical and Electronic Engineering, IUST, vol. 1, no. 2, pp. 88-93 (2005). [Abstract](#)
- 73- A. Bazaei, V.J. Majd, *Feedback Linearization of Discrete-Time Nonlinear Uncertain Plants via First-Principles-Based Serial Neuro-Gray-Box Models*, Journal of Process Control, Elsevier, vol. 13, no. 8, pp. 819-830 (2003). [Abstract](#)
- 74- V.J. Majd, H. Hasanzadegan, *A New Method for Tool-Path Generation and Adaptive Identification of a Three Axis CNC Milling Machine*, Modares Journal of Engineering, Tehran, Iran, Vol. 2, no. 1, pp. 105-114 (2002). [Abstract](#)
- 75- V.J. Majd, M. A. Simaan, W. G. Vogt, *Approximate Time Optimal Control of D.C. Servos with Unknown Load and Nonlinear Friction Torque*, Journal of Optimal Control, Applications & Methods, Vol. 16, no. 5, pp. 361-371 (1995). [Abstract](#)

Selected Conference Papers

- 1- H. Mahmoodzadeh, V.J. Majd, A. Ehsani-Seresht, *A Design and implementation of a 3D positioning and control capsule robot using magnetic waves*, 8th International Conference on Control, Instrumentation and Automation (ICCIA), Tehran, Iran (2022). [Abstract](#)
- 2- M. Siavash, V.J. Majd, *A Robust Finite-time Fault-tolerant Formation Control of Stochastic Multi-agent Systems in the Mean-Square Sense*, 28th Iranian Conference on Electrical Engineering (ICEE), Tabriz, Iran (2020). [Abstract](#)
- 3- M. Ramedani, V.J. Majd, *Distance Estimation for Endoscopy Based on Depth Detection in the Small Intestine Using Image Processing techniques*, 6th Iranian Conference on Signal Processing and Intelligent Systems (ICSPIS), Mashhad, Iran (2020). [Abstract](#)
- 4- Kh. Khandani, V.J. Majd, M.R. Darestani, *A stochastic sliding mode scheme for longitudinal control of an aircraft model*, 25th International Conference on Electrical Engineering, Tehran, Iran (2017). [Abstract](#)
- 5- M. Mostavi, V.J. Majd, *Optimal bang-bang drug protocols for AIDS patients*, 24th Iranian Conference on Electrical Engineering (ICEE), Shiraz, Iran, pp. 895-901 (2016). [Abstract](#)
- 6- M. Attar, V.J. Majd, *Estimation of Decentralized Unknown Dynamics for a 2DOF Manipulator Using a Time Varying Extended State Observer*, Proceedings of the 4th IEEE International Conference on Robotics and Mechatronics, Tehran, Iran, pp. 116-121 (2016). [Abstract](#)

- 7- N. Dini, V.J. Majd, *Estimation of External Forces Acting on the Legs of a Quadruped Robot using Two Nonlinear Disturbance Observers*, Proceedings of the 4th IEEE International Conference on Robotics and Mechatronics, Tehran, Iran (2016).
- 8- F. Edrisi, V.J. Majd, *Modifying the Attitude of Quadruped Robot Body against Disturbances via Data Fusion*, Proceedings of the 4th IEEE International Conference on Robotics and Mechatronics, Tehran, Iran (2016).
- 9- B. Heidarian, V.J. Majd, *Integral Sliding Mode Control of Bilateral Teleoperation With Force Estimation for n- DOF Nonlinear Manipulators*, Proceedings of the 4th IEEE International Conference on Robotics and Mechatronics, Tehran, Iran (2016).
- 10- Y. Farid, V.J. Majd, *Prescribed Performance Control of Quadruped Robot*, Proceedings of the 4th IEEE International Conference on Robotics and Mechatronics, Tehran, Iran (2016).
- 11- Kh. Khandani, V.J. Majd, M. Tahmasebi, *Suppression of chaotic oscillations of a stochastic system via sliding mode approach*, International Conference on Electrical Engineering, Tehran, Iran (2016).
- 12- Kh. Khandani, V.J. Majd, M. Tahmasebi, *Synchronization of stochastic chaotic systems using active sliding mode control*, 1st International Conference on New Research Achievements in Electrical and Computer Engineering (ICNRAECE), Tehran, Iran (2016).
- 13- M.A.J. Koopae, V.J. Majd, *An H_∞ switching T-S fuzzy controller design for position control of two-wheeled mobile robots*, Proceedings of the 3rd RSI IEEE International Conference on Robotics and Mechatronics, Tehran, Iran, pp. 49-54 (2015). [Abstract](#)
- 14- N. Dini, V.J. Majd, *Model predictive control of a wheeled inverted pendulum robot*, Proceedings of the 3rd RSI IEEE International Conference on Robotics and Mechatronics, Tehran, Iran, pp. 152-157 (2015). [Abstract](#)
- 15- N. Danaeefard, V.J. Majd, *Consensus of heterogeneous multi-agent systems using output feedback*, IEEE AI & Robotics Conference, Qazvin, Iran, pp. 1-7 (2015). [Abstract](#)
- 16- N. Danaeefard, V.J. Majd, *Formation Control and Trajectory Tracking Control of Heterogeneous Multi-Agent Systems*, 2nd National Conference on Applied Research in Electrical, Mechanical, and Mechatronics Engineering, Iran, pp. 1-7 (2015).
- 17- F. Edrisi, V.J. Majd, *Attitude estimation of an accelerated rigid body with sensor fusion based-on switching extended Kalman filter*, IEEE AI & Robotics Conference, Qazvin, Iran, pp. 1-6 (2015). [Abstract](#)
- 18- M.A.J. Koopae, V.J. Majd, *Controller design with constraint on control input and output for T-S fuzzy systems with nonlinear local model*, 23rd Iranian Conference on Electrical Engineering (ICEE), Tehran, Iran, pp. 876-881 (2015). [Abstract](#)
- 19- S. Payandeh, V.J. Majd, S. Moradi, M.M. Moghaddam, *Improving the stability of gait planning for quadruped robots*, Proceedings of the 2nd RSI/ISM IEEE Conference on Robotics and Mechatronics, Tehran, Iran, pp. 382-387 (2014).
- 20- A. Eskandarpour, V.J. Majd, *Cooperative Formation Control of Quadrotors with Obstacle Avoidance and Self Collisions Based on a Hierarchical MPC Approach*, Proceedings of the 2nd RSI/ISM IEEE Conference on Robotics and Mechatronics, Tehran, Iran, pp. 351-356 (2014).
- 21- M. Pourgholi, V.J. Majd, *Fault Detection Using Adaptive Observer for a Class of Nonlinear Systems: An LMI Approach*, International Conference on Control Communication and Computing (ICCC), Trivandrum, India, pp. 11-15 (2013).
- 22- S. Mobayen, M.H. Asemani, V.J. Majd, *Transient Performance Improvement Using Composite Nonlinear Feedback and Integral Sliding Surface for Matched and Unmatched Uncertain MIMO Linear Systems*, The 3rd IEEE International Conference on Control, Instrumentation, and Automation (ICCIA), Tehran, Iran, pp. 83-88 (2013).
- 23- Gh. Hadian, Y. Kheiri, A. Saadatkhah, V.J. Majd, *Sliding Mode Formation Control and Target Tracking for a Team of Mobile Robots Using Decentralized and Distributed Kalman Filter*, The 3rd IEEE International Conference on Control, Instrumentation, and Automation (ICCIA), Tehran, Iran, pp. 237-242 (2013).
- 24- Gh. Hadian, Y. Kheiri, A. Saadatkhah, V.J. Majd, *Dynamic Obstacle Avoidance and Target Tracking for a Swarm of Robots Using Distributed Kalman Filter*, The 3rd IEEE International Conference on Control, Instrumentation, and Automation (ICCIA), Tehran, Iran, pp. 255-259 (2013).
- 25- Y. Kheiri, Gh. Hadian, A. Saadatkhah, V.J. Majd, *Robust Adaptive Formation Control and Target Tracking for a Team of Mobile Robots Using Decentralized and Distributed Kalman Filter*, International Conference on Electrical and Computer Engineering (ICECE), Istanbul, Turkey (2013).
- 26- H. Moradi, V.J. Majd, *Dissipativity-Based Controller Redesign for Uncertain Nonlinear Switched Systems*, International Conference on Electrical and Computer Engineering (ICECE), Istanbul, Turkey (2013).
- 27- M. Fayyazbakhsh, V.J. Majd, *Synchronization of Commensurate Fractional-Order Chaotic Systems via Sliding Mode Controllers*, 43rd Annual Iranian Mathematics Conference, Tabriz, Iran, pp. 1370-1377 (2012).
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Theses Supervision

- Advising and co-advising about 100 Master's theses and Ph.D. dissertations in the mentioned research fields.

Courses Taught

- ♦ Fuzzy Control, Neural networks and Artificial Intelligence, Neural Control, Intelligent Control, Optimal Control, Modern Control, Digital Control, Computer Aided Control Design.

Directed National, Academic, and Industrial Research Projects

- *Design and Implementation of a Load-Carrying Quadruped Robot*, Ministry of Industry, Mine, and Trade (2014).
- Research Project Director of *Design and Implementation of a Reciprocator Robot for Uniform Coating*, Ministry of Industry, Mine, and Trade (2009).
- Research Project Director of *Investigating Intelligent Control Systems of Tunnels and Providing its National Executive Plan*, Ministry of Road and Transportation (2006).
- Designer and Executive Manager of *Intelligent Automation of 320 Tone Air-Cooled Chiller Units for Khark Petroleum Project*, Saravel Corp. (2003).

- Research Director of National Research Project on *Design and Implementation of an Adaptive Fuzzy Anti-Lock Braking Systems* (2002).

Intelligent Control Systems Laboratory (ICSLAB)

ICS Laboratory was established by Professor Vahid J. Majd in 2006, which provides research facilities for his M.Sc. and Ph.D. students in the areas of neural networks and deep learning, reinforcement learning, intelligent identification and control, ingestible capsule robots, soft robots, neuro-fuzzy control, multi-agent learning, cooperative control, formation control. For more information concerning this laboratory, please visit the following link:

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