CURRICULUM VITAE
Dr. Nader Meskin
Electrical Engineering
PERSONAL DETAILS

Name: Nader Meskin
Address: Dept. of Electrical Engineering, Qatar University,
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EDUCATION

- **Ph.D.** in Electrical and Computer Engineering from Concordia University, Montreal, Canada in 2008
  Thesis Title: ***Fault Detection and Isolation in a networked multi-vehicle unmanned system.***
- **M.Sc.** in Electrical and Computer Engineering from University of Tehran, Iran in 2001.
  Thesis Title: ***H-infinity Estimation of Vehicle Dynamics and modified sliding mode control of Antilock Braking system.***
- **B.Sc.** in Electrical Engineering from Sharif University of Technology, Iran in 1998.

PROFESSIONAL EXPERIENCE

- **Qatar University, Doha, Qatar, Oct. 2015 - Present**
  Associate Professor of Electrical Engineering

- **Qatar University, Doha, Qatar, Jan. 2011 – Oct. 2015**
  Assistant Professor of Electrical Engineering

- **Concordia University, Montreal, Canada, June 2012 – Present**
  Affiliated Assistant Professor of Electrical Engineering

- **Concordia University, Montreal, Canada, Aug 2011 – Sept 2011**
  Visiting Professor of Electrical Engineering

- **Texas A&M University at Qatar, Doha, Qatar, Jan. 2010 – Dec 2010**
  Post-doctoral Fellow in Department of Electrical and Computer Engineering

- **Concordia University, Montreal, Canada, Nov. 2008 – Dec 2009**
  Post-doctoral Fellow in Department of Electrical and Computer Engineering

- **Numérica Technologies Inc., Montreal, Canada, Sep. 2008 – Sep. 2009**
  Research Consultant

- **Concordia University, Montreal, Canada, Sep. 2004 – Oct. 2008**
  Graduate research assistant in Department of Electrical and Computer Engineering

- **Niroo Research Institute, Tehran, Iran, June. 2002 – Aug 2004**
  Electrical Engineer

AWARDS

- **Best Presentation Award in QNRF ARC'16, March 2016.**
- **Deans Award for Research, 2012/13 Academic Year.**

PUBLICATIONS

	IEEE& IET journals	Other journals	Conferences	Books	Total
Number of papers	17	19	86	1	123

BOOKS

1. N. Meskin and K. Khorasani, "Fault Detection and Isolation: Multi-Vehicle Unmanned Systems", Springer, Feb 2011.

JOURNAL PAPERS

1. H. S. Abbas, R. Tóth, N. Meskin, J. Mohammadpour, J. Hanema, "A Robust MPC for Input-Output LPV Models," *IEEE Transactions on Automatic Control,* in press.
2. M. Davoodi, N. Meskin and K. Khorasani, "Event-Triggered Multi-objective Control and Fault Diagnosis: A Unified Framework," *IEEE Transactions on Industrial Informatics,* to appear.
3. B. Pourbabaee, N. Meskin, and K. Khorasani, "Robust Sensor Fault Detection and Isolation of Gas Turbine Engines Subjected to Time-Varying Parameter Uncertainties," *Mechanical Systems and Signal Processing*, to appear.
4. Z. Gallehdari, N. Meskin, K. Khorasani, "A Distributed Control Reconfiguration and Accommodation for Consensus Achievement of Multiagent Systems Subject to Actuator Faults", *IEEE Transactions on Control System Technology,* in press.
5. S. Z. Rizvi, J. Mohammadpour, R. Tóth, N. Meskin, "A Kernel-based PCA Approach to Model Reduction of Linear Parameter-varying Systems," *IEEE Transactions on Control System Technology,* in press.
6. B. Pourbabaee, N. Meskin, and K. Khorasani, "Sensor Fault Detection, Isolation and Identification Using Multiple Model-based Hybrid Kalman Filter for Gas Turbine Engines", *IEEE Transactions on Control System Technology,* to appear.
7. M. Davoodi, N. Meskin and K. Khorasani, "Simultaneous Fault Detection and Consensus Control Design for a Network of Multi-agent Systems", *Automatica*, Vol 66, pp. 185-194, April 2016.
8. Sh. Hajshirmohamadi, M. Davoodi, Nader Meskin, and F. Sheikholeslam, "Event-triggered Fault Detection and Isolation for Discrete-time Linear Systems", *IET Control Theory and Application*, Vol. 10, No. 5, 526-533, March 2016.
9. S. Rahme, H. S. Abbas, N. Meskin, R. Tóth and Javad Mohammadpour, "LPV Model Development and Control of A Solution Copolymerization Reactor", *Control Engineering*

Practice, Vol. 48, pp. 98-110, March 2016.

10. S. P. Hou, N. Meskin, and W. M. Haddad, "Adaptive Sliding Mode Control for a General Nonlinear Multicompartment Lung Model with Input Pressure and Rate Saturation Constraints", *International Journal of Robust and Nonlinear Control,* Vol. 26, No. 4, pp. 719-736, 2016.

11. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "A dynamic prognosis scheme for flexible operation of gas turbines", *Applied Energy*, Vol. 164, pp. 686-701, Feb 2016.

12. S. P. Hou, W. M. Haddad, N. Meskin, and J. M. Bailey "A Mechanistic Neural Mean Field Theory of How Anesthesia Suppresses Consciousness: Synaptic Drive Dynamics, System Stability, Attractors, Partial Synchronization, Partial Synchronization, and the Anesthetic Cascade," *Journal of Mathematical Neuroscience*, Vol. 5, no. 20, 2015.

13. S. P. Hou, N. Meskin, and W. M. Haddad, "Optimal Determination of Respiratory Airflow Patterns for a General Multicompartment Lung Mechanics System with Nonlinear Resistance and Compliance Parameters," *ASME Journal of Dynamic Systems, Measurement and Control,* Vol. 137, no 12, pp. 121014, Dec. 2015.

14. R. Padmanabhan, N. Meskin, and W. M. Haddad, "Closed-Loop Control of Anesthesia and Mean Arterial Pressure using Reinforcement Learning", *Biomedical Signal Processing and Control,* Vol. 22, pp. 54-64, Sept. 2015.

15. Sandy Rahme, N. Meskin, "Adaptive sliding mode observer for sensor fault diagnosis of an industrial gas turbine", *Control Engineering Practice,* Vol. 38, pp. 57-74, 2015.

16. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "Transient Gas Turbine performance diagnostics through nonlinear adaptation of compressor and turbine maps" *Journal of Engineering for Gas Turbines and Power,* Vol. 137, no. 9, GTP-14-1630, 2015.

17. R. Padmanabhan, N. Meskin, and W. M. Haddad, "Optimal Control of Midazolam Infusion for Post Operative Patients in Intensive Care Units", *Asian Journal of Control*, Vol. 17, No. 2, pp. 675-686, March 2015.

18. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "A component map tuning method for performance prediction and diagnostics of gas turbine compressors", *Applied Energy,* Vol. 135, pp. 572-585, Dec. 2014.

19. S. P. Hou, N. Meskin, and W. M. Haddad, "Output-Feedback Sliding Mode Control for a Linear Multicompartment Lung Mechanics Systems", *International Journal of Control*, Vol. 87, No. 10, pp. 2044-2055, 2014.

20. Z. N. Sadough Vanini, N. Meskin, and K. Khorasani, "Multiple-Model Sensor and Components Fault Diagnosis in Gas Turbine Engines Using Autoassociative Neural Networks", *Journal of Engineering for Gas Turbines and Power,* 136(9), GTP-13-1429*,* 2014.

21. Z. N. Sadough Vanini, K. Khorasani, and N. Meskin "Fault Detection and Isolation of a dual spool gas turbine engine using dynamic neural networks and multiple model approach", *Information Sciences*, Vol. 259, pp. 346-358, 2014.

22. M. El-Koujok, M. Benammar, N. Meskin, M. Al-Naemi and R. Langari "Multiple Sensor Fault Diagnosis by Evolving Data-Driven Approach", *Information Sciences*, Vol. 259. pp. 234-251, 2014.

23. N. Meskin, H. Nounou, M. Nounou, and A. Datta, "Parameter Estimation of Biological Phenomena: An Unscented Kalman Filter Approach", *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 10, No. 2, pp. 537-543, 2013.

24. N. Meskin, E. Naderi and K. Khorasani, "A Multiple Model-based Approach for Fault Diagnosis of Jet Engines", *IEEE Trans. on Control System Technology*, 21(1), pp. 254-262, 2013.

25. H. Nounou, M. Nounou, N. Meskin, A. Datta, and E. Dougherty, "Fuzzy Intervention in Biological Phenomena" *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 9, No. 6, pp. 1819-1825, 2012.

26. M. Nounou, H. Nounou, N. Meskin, A. Datta, and E. Dougherty, "Multiscale Denoising of Biological Data: A Comparative Analysis" *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 9, No 5, pp 1539-1545, 2012.

27. E. Naderi, N. Meskin and K. Khorasani, "Nonlinear Fault Diagnosis of Jet Engines by using a Multiple Model-based Approach" *Journal of Engineering for Gas Turbines and Power*, Vol. 134, No.1 2011.

28. N. Meskin and K. Khorasani, "Fault Detection and Isolation of Linear Impulsive Systems," *IEEE Transactions on Automatic Control*, Vol. 56, No. 8, pp. 1905-1910, 2011.

29. N. Meskin, H. Nounou, M. Nounou, A. Datta and E. R. Dougherty, "Intervention in Biological Phenomena Modeled by S-Systems," *IEEE Transactions on Biomedical Engineering*, Vol. 58, No. 5, pp. 1260-1267, 2011.

30. N. Meskin, K. Khorasani, and C. A. Rabbath, "Hybrid Fault Detection and Isolation Strategy for Nonlinear Systems in Presence of Large Environmental Disturbances," *IET Control Theory & Applications*, Vol. 4, No. 12, pp. 2879 – 2895, 2010.

31. N. Meskin, K. Khorasani, and C. A. Rabbath, "A Hybrid Fault Detection and Isolation Strategy for a Network of Unmanned Vehicles in Presence of Large Environmental Disturbances," *IEEE Transactions on Control System Technology*, Vol.18 No. 6, pp. 1422-1429, 2010.

32. N. Meskin and K. Khorasani, "A Geometric Approach to Fault Detection and Isolation of Continuous-time Markovian Jump Systems," *IEEE Transactions on Automatic Control*, Vol. 55, No. 6, pp. 1343-1357, 2010.

33. N. Meskin and K. Khorasani, "Fault Detection and Isolation of Distributed Time-Delay Systems," *IEEE Transactions on Automatic Control*, Vol. 54, No.11, pp. 2680-2685, 2009.

34. N. Meskin and K. Khorasani, "Fault Detection and Isolation of discrete-time Markovian Jump systems with Application to a Network of Multi-Agent System Having Imperfect Communication Channels", *Automatica*, Vol. 45, No. 9, pp. 2032-2040, 2009.

35. N. Meskin and K. Khorasani, "Robust Fault Detection and Isolation of Time-delay Systems Using a Geometric Approach," *Automatica*, Vol. 45, No. 6, pp. 1567-1573. 2009.

36. N. Meskin and K. Khorasani, "Actuator Fault Detection and Isolation for a Network of Unmanned Vehicles," *IEEE Transactions on Automatic Control*, Vol. 54, No.4, pp. 835-840, 2009.

CONFERENCE PAPERS

1. M. Mirzaei, F. Abdollahi, N. Meskin, "Global Stabilization of Autonomous Underactuated Underwater Vehicles in 3D Space", *2016 IEEE International Conference on Advanced Intelligent Mechatronics,* July 2016.

2. A. Golabi, N. Meskin, R. Tóth, J. Mohammadpour, M.C.F. Donkers, "Event-triggered Control for Discrete-time LPV Systems", *American Control Conference,* July 2016.

3. Q. Liu, J. Mohammadpour, R. Tóth, N. Meskin, "Non-Parametric Identification of Linear Parameter-Varying Spatially-Interconnected Systems Using an LS-SVM Approach, *American Control Conference,* July 2016.

4. Z. Gallehdari, N. Meskin, K. Khorasani, "Suboptimal Guaranteed Cost Control Reconfiguration in Switched Multi-Agent Networked Systems", *American Control Conference*, July 2016.

5. Y. Batmani, M. Davoodi, N. Meskin, "On Design of Suboptimal Tracking Controller for a Class of Nonlinear Systems", *American Control Conference*, July 2016.

6. Z. Gallehdari, N. Meskin, K. Khorasani, "Reconfigurable Control Design in Multi-Agent Systems Subject to Actuator Faults and Disturbances", *American Control Conference*, July

2016.

7. S. Hajshirmohamadi, M. Davoodi, N. Meskin, "Event-triggered Fault Detection for Discrete-time Linear Multi-agent Systems", *American Control Conference*, July 2016.

8. M. Mirzaei, F. Abdollahi, N. Meskin, "Consensus of Autonomous Underactuated Surface Vessels", *American Control Conference*, July 2016.

9. A. Gremek, N. Meskin, E. Sobhani, R. Kearney, "The Characterization of the Kinematic and Dynamic Properties of an Ankle Joint for an Artificial Ankle Joint Design", *6th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2016),* June 2016.

10. A. Gremek, N. Meskin, E. Sobhani, R. Kearney, "Design and Development of a Hydraulic Ankle-Foot Orthosis", *6th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2016),* June 2016.

11. N. Sadeghzadeh, M. Davoodi, and N. Meskin, "Stochastic Event-Triggered Based Particle Filtering for State Estimation", *IEEE Second Conference on Event-based Control, Communication, and Signal Processing, Krakow* June 2016.

12. M. Davoodi, N. Meskin and K. Khorasani, "Event-Triggered Fault Estimation and Accommodation Design for Linear Systems", *IEEE Second Conference on Event-based Control, Communication, and Signal Processing, Krakow*, June 2016.

13. Sh. Hajshirmohamadi, F. Sheikholeslam, M. Davoodi, and Nader Meskin, "Event-triggered Simultaneous Fault Detection and Consensus Control for Linear Multi-agent Systems", *IEEE Second Conference on Event-based Control, Communication, and Signal Processing, Krakow*, June 2016.

14. A. Golabi, M. Davoodi, N. Meskin J. Mohammadpour and R. Toth, "Event-triggered Fault Detection for Discrete-time LPV Systems", *IEEE Second Conference on Event-based Control, Communication, and Signal Processing, Krakow,* June 2016.

15. A. Gremek, N. Meskin, F. Jaber, "Development of LPV Models and Switching LPV-Hinf Controller for a Hydraulic System," *The 3rd International Conference on Control, Decision and Information Technologies,* April 2016

16. M. Mirzaei, N. Meskin, F. Abdollahi, "Robust Distributed Consensus of Autonomous Underwater Vehicles in 3D Space," *The 3rd International Conference on Control, Decision and Information Technologies,* April 2016

17. Y. Batmani, M. Davoodi, N. Meskin, "State-Dependent Adaptive Dynamic Programing for a Class of Continuous-Time Nonlinear Systems", *The 3rd International Conference on Control, Decision and Information Technologies,* April 2016

18. F. Abbasi, J. Mohammadpour, R. Tóth, N. Meskin, "A Bayesian Approach for Model Identification of LPV Systems with Uncertain Scheduling Variables", *Proceeding of the 54th IEEE Conference on Decision and Control,* Dec. 2015.

19. H. S. Abbas, R. Tóth, N. Meskin, J. Mohammadpour, J. Hanema, "An MPC Approach for LPV Systems in Input-Output Form", *Proceeding of the 54th IEEE Conference on Decision and Control,* Dec. 2015.

20. S. Z. Rizvi, J. Mohammadpour, R. Tóth, N. Meskin, "An IV-SVM-based Approach for Identification of State-space LPV Models under Generic Noise Conditions", *Proceeding of the 54th IEEE Conference on Decision and Control,* Dec. 2015.

21. S. P. Hou, W. M. Haddad, N. Meskin, J. M. Bailey, "Partial Synchronization of Biological Neural Networks and the Anesthetic Cascade", *Proceeding of the 54th IEEE Conference on Decision and Control,* Dec. 2015.

22. S. P. Hou, W. M. Haddad, N. Meskin, J. M. Bailey, "A Mechanistic Neural Mean Field Theory of How Anesthesia Suppresses Consciousness: Synaptic Drive Dynamics, System Stability, Bifurcations, and Attractors", *Proceeding of the 54th IEEE Conference on Decision and Control,* Dec. 2015.

23. Sh. Hajshirmohamadi, M. Davoodi, and Nader Meskin, "Event-triggered Fault Detection for Discrete-time Linear Systems", *2015 IEEE Conference on Control Applications (CCA),*

Australia, pp. 990-995, Sept. 2015.

24. S. Rahme, H. S. Abbas, N. Meskin, R. Tóth and Javad Mohammadpour "Reduced LPV Model Development and Control of a Solution Copolymerization Reactor", *2015 IEEE Conference on Control Applications (CCA), Australia,* pp. 1044-1050, Sept. 2015.

25. H. Abbas, S. Rahme, N. Meskin, C. Hoffmann, R. Tóth, and J. Mohammadpour, "Linear Parameter-Varying Control of a Copolymerization Reactor", *1st IFAC Workshop on Linear Parameter Varying Systems (LPVS 2015),* pp. 200-206, Oct. 2015.

26. S. Z. Rizvi, J. Mohammadpour, R. Tóth, and N. Meskin "A Kernel-based Approach to MIMO LPV State-space Identification and Application to a Nonlinear Process System", *1st IFAC Workshop on Linear Parameter Varying Systems (LPVS 2015),* pp. 85-90, Oct. 2015.

27. M. Navi, M. Davoodi, and N. Meskin, "Sensor Fault Detection and Isolation of an Industrial Gas Turbine Using Partial Kernel PCA", *9th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes (IFAC SafeProcess),* pp. 1389-1396, Sept. 2015,*

28. M. Mirzaei, F. Abdollahi, N. Meskin and N. Mehdipour, "3D Global Asymptotic Stabilization of Autonomous Underactuated Underwater Vehicles", *23rd Mediterranean Conference on Control and Automation,* June 2015.

29. M. Davoodi, N. Meskin and K. Khorasani, "Event-Triggered Fault Detection, Isolation and Control Design of Linear Systems", *IEEE First Conference on Event-based Control, Communication, and Signal Processing, Krakow,* pp. 1-6, June 2015.

30. M. Navi, M. Davoodi, and N. Meskin, "Sensor Fault Detection and isolation of an Autonomous Unmanned Underwater Vehicle System Using Partial Kernel PCA", *IEEE International Conference on Prognostics and Health Management, Austin, TX,* June 2015.

31. N. Daroogheh, A. Baniamerian, N. Meskin, and K. Khorasani, "A Hybrid Health Monitoring and Prognosis Approach With Application to Gas Turbine Engines", *IEEE International Conference on Prognostics and Health Management, Austin, TX,* June 2015.

32. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "Performance-based prognosis scheme for industrial gas turbines", *IEEE International Conference on Prognostics and Health Management, Austin, TX,* pp. 1-8, June 2015.

33. A. Salar, N. Meskin, and K. Khorasani, "A Novel Affine qLPV Model Derivation Method for Fault Diagnosis H- Performance Improvement", *Proc. Amer. Contr. Conf., Chicago, IL,* pp. 823-830, July 2015.

34. A. Vatani, K. Khorasani, and N. Meskin "Health Monitoring and Degradation Prognostics in Gas Turbine Engines Using Dynamic Neural Networks", *Turbo expo 2015,* GT2015-44101, June 2015.

35. E. Sobhani, K. Khorasani, and N. Meskin, "Fault Diagnosis of Nonlinear Systems using Dynamic Neural networks", *International Conference on Neural Networks,* Barcelona, Spain, 2015.

36. R. Padmanabhan, N. Meskin, and W. M. Haddad, "Closed-Loop Control of Anesthesia and Mean Arterial Pressure Using Reinforcement Learning", *2014 IEEE Symposium on Adaptive Dynamic Programming and Reinforcement learning, Orlando, USA, 2014*

37. M. Davoodi, N. Meskin and K. Khorasani, "Integrated Fault Detection, Isolation and Control Design for Continuous-time Markovian Jump Systems with Uncertain Transition Probabilities", *Proceeding of the 53rd IEEE Conference on Decision and Control,* pp. 5743-5749, 2014.

38. S. P. Hou, N. Meskin, and W. M. Haddad, "Adaptive Sliding Mode Control for a General Nonlinear Multi-compartment Lung Model with Input Pressure and Rate Saturation Constraints", *Proceeding of the 53rd IEEE Conference on Decision and Control,* pp. 4733-4738, 2014.

39. N. Daroogheh, N. Meskin, and K. Khorasani, "Robust Hybrid EKF Approach for State Estimation in Multi-Scale Nonlinear Singularly Perturbed Systems", *Proceeding of the 53rd IEEE Conference on Decision and Control,* pp. 1047-1054, 2014.

40. A. Gholabi, N. Meskin, R. Tóth, and, J. Mohammadpour "A Bayesian Approach for Estimation of LPV Linear-Regression Models", *53rd IEEE Conference on Decision and Control,* pp. 2555-2560, 2014.

41. B. Pourbabaee, N. Meskin, and K. Khorasani, " Sensor Fault detection and isolation using Multiple robust filters for linear systems with time-varying parameter uncertainty and error variance constraints," *Proc. IEEE Multi-Conf. Syst. Contr. Antibes, France,* pp. 382 − 389, 2014.

42. H. Abbas, R. Tóth, M. Petreczky, N. Meskin, and J. Mohammadpour, "Embedding of Nonlinear Systems in a Linear Parameter-Varying Representation", *Proc. IFAC World Congress,* pp. 6907-6913, Aug. 2014.

43. F. Abbasi, J. Mohammadpour, R. Tóth, and N. Meskin, "A Support Vector Machine-based Method for LPV System Identification with Noisy Scheduling Parameters", *Proc. European Control Conference,* pp. 370-375, June 2014.

44. S. Z. Rizvi, J. Mohammadpour, R. Tóth, and N. Meskin, "Parameter Set-mapping using Kernel-based PCA for Linear Parameter-varying Systems", *Proc. European Control Conference,* pp. 2744-2749, June 2014.

45. Z. Galledari, N. Meskin and K. Khorasani, "Robust Cooperative Control Reconfiguration/Recovery in Multi-Agent Systems", *Proc. European Control Conference,* pp. 1554-1561, June 2014.

46. A. Baniamerian, N. Meskin and K. Khorasani, "Fault Detection and Isolation of Riesz Spectral Systems: A Geometric Approach", *Proc. European Control Conference,* pp. 2145-2152, June 2014.

47. M. Davoodi, N. Meskin and K. Khorasani, "Simultaneous Fault Detection and Control Design for a Network of Multi-agent Systems", *Proc. European Control Conference,* pp. 575- 581, June 2014.

48. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "An efficient component map generation method for prediction of gas turbine performance", *ASME Turbo Expo 2014, GT2014-25753, June 2014.*

49. Z. Galledari, N. Meskin and K. Khorasani, "Cost Performance Based Control Reconfiguration in Multi-Agent Systems", *Proc. Amer. Contr. Conf., Portland, OR*, pp. 509-516, June 2014.

50. S. P. Hou, N. Meskin, and W. M. Haddad, "A General Multicompartment Lung Mechanics Model with Nonlinear Resistance and Compliance Respiratory Parameters", *Proc. Amer. Contr. Conf., Portland, OR,* pp. 566-571, June 2014.

51. N. Daroogheh, N. Meskin, and K. Khorasani, "A Novel Particle Filter Parameter Prediction Scheme for Failure Prognosis", *Proc. Amer. Contr. Conf., Portland, OR,* pp. 1735-1742, June 2014.

52. M. Davoodi, N. Meskin and K. Khorasani, "Simultaneous Fault Detection, Isolation and Control Tracking Design Using a Single Observer-Based Module", *Proc. Amer. Contr. Conf., Portland, OR,* pp. 3047-3052, June 2014.

53. A. Baniamerian, N. Meskin, and K. Khorasani, "Fault Detection and Isolation of Fornasini-Marchesini 2D Systems: A Geometric Approach", *Proc. Amer. Contr. Conf., Portland, OR,* pp. 5527-5533, June 2014.

54. R. Padmanabhan, N. Meskin, and W. M. Haddad, "Direct Adaptive Disturbance Rejection Control for Sedation and Analgesia", *2nd Middle East Conference on Biomedical Engineering,* pp. 175-179, Feb. 2014.

55. E. Tsoutsanis, N. Meskin, M. Benammer and K. Khorasani, "Dynamic Performance Simulation of an Aeroderivative Gas Turbine Using the Matlab Simulink Environment", *Proc. of ASME 2013 International Mechanical Engineering Congress & Exhibition*, IMECE2013-64101.

56. M. Davoodi, N. Meskin and K. Khorasani, "Simultaneous Fault Detection and Control Design for an Autonomous Unmanned Underwater Vehicle," *Seventh IEEE-GCC Conference and Exhibition 2013*, pp. 529 – 534, Nov. 2013.

57. E. Alizadeh, N. Meskin, M. Benammar and K. Khorasani, "Fault Detection and Isolation of the Wind Turbine Based on the Real-Valued Negative Selection Algorithm," *Seventh IEEE - GCC Conference and Exhibition 2013*, pp. 11-16, Nov. 2013.

58. R. Padmanabhan, N. Meskin, and W. M. Haddad, "Optimal Control of Midazolam Infusion for Post Operative Patients in Intensive Care Units," *Proc. IEEE Multi-Conf. Syst. Contr., Hyderabad, India*, pp. 91-96, August, 2013.

59. S. P. Hou, N. Meskin, and W. M. Haddad, "Output-Feedback Sliding Mode Control for a Linear Multicompartment Lung Mechanics Systems," *Proc. IEEE Multi-Conf. Syst. Contr., Hyderabad, India*, pp. 103-108, August, 2013.

60. N. Daroogheh, N. Meskin, and K. Khorasani, "Particle Filtering for State and Parameter Estimation in Gas Turbine Engine Fault Diagnostics", *Proc. Amer. Contr. Conf., Washington, DC*, pp. 4343-4349, June 2013.

61. B. Pourbabaee, N. Meskin, and K. Khorasani, "Multiple-Model Based Sensor Fault Diagnosis Using Hybrid Kalman Filter Approach for Nonlinear Gas Turbine Engines", *Proc. Amer. Contr. Conf., Washington, DC*, pp. 4717-4723, June 2013.

62. A. Baniamerian, N. Meskin, and K. Khorasani, "Geometric Fault Detection and Isolation of Two-Dimensional Systems", *Proc. Amer. Contr. Conf., Washington, DC*, pp. 3541-3548, June 2013.

63. M. Nounou, H. Nounou, N. Meskin, and A. Datta, "Wavelet-based Multiscale Filtering of Genomic Data", *2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, pp. 804 – 809.

64. M. El-Koujok, M. Benammar, N. Meskin, M. Al-Naemi, and R. Langari, "Multiple sensor fault diagnosis for nonlinear and dynamic system by evolving approach", *2012 IEEE Conference on Prognostics and System Health Management (PHM)*.

65. N. Meskin, H. Nounou, M. Nounou, A. Datta and E. R. Dougherty, "Output-Feedback Model Predictive Control of Biological Phenomena Modeled by S-Systems", *American Control Conference, Montreal, Canada, July 2012*.

66. N. Meskin, H. Nounou, M. Nounou, A. Datta and E. R. Dougherty, "Parameter Estimation of Biological Phenomena Modeled by S-systems: An Extended Kalman Filter Approach," *50th IEEE Conference on Decision and Control and European Control Conference, 2011*.

67. N. Meskin, H. Nounou, M. Nounou, A. Datta and E. R. Dougherty, "Intervention in Biological Phenomena Modeled by S-Systems: A Model Predictive Control Approach," *American Control Conference*, pp. 3519 - 3523, 2011.

68. E. Naderi, N. Meskin, and K. Khorasani, "Nonlinear Fault Diagnosis of Jet Engines by using a Multiple Model-based Approach," *ASME Turbo Expo 2011*, GT2011-45143.

69. N. Meskin, E. Naderi, and K. Khorasani, "Fault Diagnosis of Jet Engines by using a Multiple Model-based Approach," *ASME Turbo Expo 2010*, GT2010-23442.

70. N. Meskin and K. Khorasani, "Fault Detection and Isolation of Linear Impulsive Systems," *48th IEEE Conference on Decision and Control/28th Chinese Control Conference, Shanghai 2009*.

71. N. Meskin, K. Khorasani, and C. A. Rabbath, "Fault Diagnosis in a Network of Unmanned Aerial Vehicles with Imperfect Communication Channels," *AIAA Guidance, Navigation, and Control Conference, Chicago 2009*, AIAA-2009-6100.

72. N. Meskin, K. Khorasani, and C. A. Rabbath, "Fault Detection and Isolation Strategy for a Network of Unmanned Vehicles in Presence of Large Environmental Disturbances," *AIAA Guidance, Navigation, and Control Conference, Chicago 2009*, AIAA-2009-5656.

73. N. Meskin and K. Khorasani, "Unobservability Subspaces for Continuous-time Markovian Jump Systems with Application to Fault diagnosis," *Proceeding of the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes, Barcelona,* pp. 953-958, 2009.

74. N. Meskin and K. Khorasani, "Robust Fault Detection and Isolation of Linear Systems with Distributed Delays," *Proceeding of the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes, Barcelona*, pp. 768-773, 2009.

75. N. Meskin, K. Khorasani, and C. A. Rabbath "Fault Consensus in a Network of Unmanned Vehicles," *Proceeding of the 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes, Barcelona*, pp. 1001-1006, 2009.

76. N. Meskin and K. Khorasani, "Finite Unobservability Subspaces for Time-delay Systems with Application to Fault Detection and Isolation," *Proceeding of the 15th IFAC Symposium on System Identification, Saint-Malo, France*, pp. 215-220, 2009.

77. N. Meskin and K. Khorasani, "Fault Detection and Isolation of Retarded Time-delay Systems Using a Geometric Approach," *Proceeding of IFAC World Congress, Seoul*, pp. 7326-7331, 2008.

78. N. Meskin and K. Khorasani, "A Geometric Approach to Fault Detection and Isolation of Neutral Time-delay Systems," *Proceeding of American Control Conference,* pp. 3293-3298, 2008.

79. N. Meskin and K. Khorasani, "A Geometric Approach to Robust Fault Detection and Isolation of Markovian Jump Systems," *Proceeding of American Control Conference, pp.* 2822-2827, 2008.

80. N. Meskin and K. Khorasani, "Fault Detection and Isolation in a Redundant Reaction Wheels Configuration of a Satellite", *Proceeding of IEEE International Conference on Systems, Man, and Cybernetics,* pp 3153-3158, 2007

81. N. Meskin, T. Jiang, E. Sobhani, K. Khorasani and C. A. Rabbath, "A Nonlinear Geometric Fault Detection and Isolation Approach for Almost-Lighter Than-Air-Vehicles," *Proceeding of IEEE Multi-conference on Systems and Control,* pp 1073-1078, 2007.

82. N. Meskin, T. Jiang, E. Sobhani, K. Khorasani and C. A. Rabbath, "Application of a Nonlinear Geometric Fault Detection and Isolation Approach to a Longitudinal Aircraft Model," *Proceeding of American Control Conference*, 5771-5776, 2007

83. N. Meskin and K. Khorasani, "Fault Detection and Isolation of Actuator Faults in Overactuated systems," *Proceeding of American Control Conference*, pp. 2527-2532, 2007.

84. T. Jiang, N. Meskin, E. Sobhani, K. Khorasani and C. A. Rabbath, "Fault tolerant cooperative control for UAV rendezvous problem subject to actuator faults," *Proceeding of the SPIE*, Vol. 6561, paper 65611J, 2007.

85. N. Meskin and K. Khorasani, "Fault Detection and Isolation for Actuator Faults in Spacecraft Formation Flying," *Proceeding of the 45th IEEE Conference on Decision and Control*, pp. 1159-1164, 2006.

86. Karuei, N. Meskin and A.G. Aghdam," Multilayer Switching Control," *Proceeding of American Control Conference*, pp. 4772 – 4777, 2005.

RESEARCH GRANTS

- **Starting up grant from Qatar University (PI)**   **(2011)**   **(QR 50,000)**
  QUSG-ENG-SPR-11/12-14
- **Student grant from Qatar University (PI)**   **(2011)**   **(QR 24,000)**
  QUST-CENG-Spr-10/11-12
  Design and development of an autonomous quad-rotor platform
- **Student grant from Qatar University (PI)**   **(2011)**   **(QR 10,000)**
  QUST-CENG-Spr-10/12-27
  Control and Retrofitting of an Inverted Pendulum
- **NPRP 4th cycle project (LPI)**   **(2011)**   **($961,257.55)**
  NPRP 4-195-2-065
  Title: *Health Monitoring, Diagnosis, and Prognosis of Industrial Gas Turbines*
  Institution Names: Qatar University, Concordia University
- **NPRP 4th cycle project (Co-LPI)**   **(2011)**   **($946,113)**
  NPRP 4-187-2-060
  Title: *Decision Support and Closed-Loop Control for Intensive Care Unit Sedation*
  Institution Names: Qatar University, Georgia Institute of Technology
- **NPRP 5th cycle project (LPI)**   **(2012)**   **($1,014,568.92)**
  NPRP 5-045-2-017
  Title: *Cooperative Control and Fault Diagnosis of a Team of Unmanned Underwater Vehicles and Robots for Oil and Gas Pipeline Inspection, Spill Containment, Recovery and Remote Operation*
  Institution Names: Qatar University, Concordia University

- **NPRP 5th cycle project (LPI)**   **(2012)**   **($1,048,675.94)**
  NPRP 5 - 574 - 2 – 233
  Title: *Data-Driven Linear Parameter-Varying Model Learning and Control of Complex Process Systems*
  Institution Names: University of Georgia, Eindhoven Institute of Technology
- **UREP 11th cycle project (PI)**   **(2012)**   **($60,000)**
  UREP 11 - 093 - 2 – 027
  Title: *Qatar University First Generation of Autonomous Quadrotor Platform for IARC Competition Process Systems*
- **NPRP 6th cycle project (LPI)**   **(2013)**   **($1,032,678.24)**
  NPRP 6 - 463 - 2 – 189
  Title: *Identification of Time-Varying Human Ankle Dynamics and the Robust Robotic Control of Active Ankle Orthoses*
  Institution Names: McGill University, Hamad Hospital

SUPERVISION/CO-SUPERVISION OF POSTGRADUATE STUDENTS

- Morteza Mirzaie (2014-2015) (MSc. Amir Kabir University)
- Niloofar Jahanshahi (2014-) (MSc. Amir Kabir University)
- Esmaeil Alizadeh (2014-) (MSc. Concordia University)
- Regina Padmanabhan (2013-)(PhD. Qatar University)
- Najmeh Daroogheh (2011-) (PhD. Concordia University)

- Amir Baniamerian (2011-) (PhD. Concordia University)
- Bahareh Pourbabaee (2011-) (PhD. Concordia University)
- Amin Salar (2011-) (PhD. Concordia University)
- Nasim Sadough (2010-2012) (MSc. Concordia University)

POSTDOCTORAL AND RESEARCH ASSISTANT

- Elias Tsoutsanis (2012-2015) (Postdoc)
- Sandy Rahme (2014-) (Postdoc)
- Hossam Abbes (2014-2015) (Postdoc)
- Artur Gremek (2014-) (Postdoc)
- Hasan Khadar (2014-2015)(Research Assistant)
- MohammadReza Davoodi (2013-)(Postdoc)
- Arash Golabi (2013-2016) (Research Assistant)
- Mani Navi (2014-) (Research Assistant)
- Saing Paul Hou (2012-2015) (Postdoc)
- Esmaiel Alizadeh (2012-2013)(Research Assistant)

PROFESSIONAL ACTIVITIES

Invited Talk:
- *Biological Phenomena Modelled by S-systems: Parameter Estimation and Intervention,* IEEE Control Systems Society, Montreal Chapter, Concordia University, Sept. 2, 2011
- *Fault Detection and Isolation: Multi-Vehicle Unmanned Systems,* IEEE Control Systems Society, Montreal Chapter, Concordia University, Sept. 8, 2011

Conference Organization:
- Chair of "PCA Based Monitoring Methods" session at 9th SAFEPROCESS, Sept. 2015.
- Member of Organizing Committee in Middle East Conference on Biomedical Engineering (MECBME'14).
- Member of Organizing Committee in the International Conference on Microelectronics IEEE ICM 2013.
- Member of Technical Program Committee of Control and Robotics Symposium in the 23rd IEEE Canadian Conference on Electrical and Computer Engineering
- Co-chair of "Fault Detection" session in American Control Conference (ACC) 2006.
- Co-chair of "Monitoring and Fault Detection" session at 15th IFAC Symposium on System Identification, July 2009.

Reviewer:
- IEEE Transaction on Automatic Control,
- Automatica,
- IEEE Transaction on Robotics,
- IEEE Transaction on Control System Technology,
- International Journal of Control,
- IEEE Transaction on Fuzzy Systems,
- International Journal of Adaptive Control and Signal Processing

- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Conference on Decision and Control,
- IEEE Conference on Control Applications, IFAC Congress,
- American Control Conference

Society Membership:

- Member, IEEE, IEEE Control Systems Society, and IEEE Engineering in Medicine and Biology.

COMMITTEES IN QATAR UNIVERSITY

- A chair of Graduate Study and Research Committee of the EE Department at Qatar University
- A member of Research Committee of the College of Engineering, Qatar University
- A member of Graduate Study Committee of the College of Engineering, Qatar University

TEACHING

Spring 2011
ELEC 351	Signals and Systems	size = 19 students
ELEC 352	Control Systems	size = 23 students

Fall 2011
ELEC 351	Signals and Systems	size = 3 students
ELEC 453	Advanced Control Systems	size = 15 students
ELEC 489	Senior Design Project	size = 3 students
ELEC 489	Senior Design Project	size = 3 students

Spring 2012
ELEC 351	Signals and Systems	size = 25 students
ELEC 352	Control Systems	size = 4 students
ELEC 499	Senior Design Project	size = 3 students
ELEC 499	Senior Design Project	size = 3 students

Fall 2012
ELEC 351	Signals and Systems	size = 25 students
ELEC 453	Advanced Control Systems	size = 11 students
ELEC 499	Senior Design Project	size = 3 students

Spring 2013
GENG 200	Probability and Statistics	size = 8 students
ELEC 352	Control Systems	size = 12 students
ELEC 499	Senior Design Project	size = 3 students

Fall 2013
ELEC 351	Signals and Systems	size = 20 students
ELEC 351	Signals and Systems	size = 31 students

Spring 2014
GENG 200	Probability and Statistics	size = 30 students
ELEC 352	Control Systems	size = 21 students
ELEC 458	Introduction to Robotics	size = 8 students
ELEC 499	Senior Design Project	size = 3 students

<u>Fall 2014</u>
ELEC 457   Special Topics in Control Systems   size = 8 students
ELEC 498   Senior Design Project I   size = 2 students