CURRICULUM VITAE Amin Ramezani, Ph.D.

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EMPLOYMENT HISTORY

Associate/Assistant Professor,

Affiliation:
Department of Electrical and Computer Engineering,
Tarbiat Modares University, Tehran, Iran
Appointment Duration:
2013-present
Address:
Jalal AleAhmad Nasr, Tehran, IRAN, 14115-111
Telephone Number:
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EDUCATIONAL HISTORY

Doctor of Philosophy, Electrical Engineering, University of Tehran , Tehran, Iran

Primary Fields: Automation and Control
Dissertation: Development of PDF Estimation Approaches Using Imperfect Information
Advisor: Prof. Behzad Moshiri
Completion Date: August 2006-September 2011

Master of Science, Electrical Engineering, Sharif University of Technology, Tehran, Iran

Primary Fields: Automation and Control
Thesis: Fuzzy Programmable Logic Controller Design
Completion Date: August 2001-August 2003

Bachelor of Science, Electrical Engineering, Beheshti University, Tehran, Iran

Primary Fields: Electronic
Completion Date: August 1997-August 2001

Diploma in Mathematics, Mathematics, Dr Hesabi High School, Ahvaz, Iran

Primary Fields: Mathematics
Completion Date: September 1993-August 1997

PUBLICATIONS

You can find my publication through Google Scholar link:

https://scholar.google.com/citations?user=bnEdbuMAAAAJhl=en

Some Selected Journal Articles (in order of publication year):

[J1] Mohammadreza Ghorvei, Mohammadreza Kavianpour, Mohammad TH Beheshti, Amin Ramezani,"Graph Convolutional Neural Network via Structured Subdomain Adaptation and Domain Adversarial Learning for Bearing Fault Diagnosis",*IEEE Transaction on Learning Network Systems*,(revised).

[J2] Hooshang Jafari, Amin Ramezani, Mehdi Forouzanfar,"Parameter-dependent Lyapunov function based fault estimation and fault-tolerant control for LPV systems".*International Journal of Systems Science* pp 1-16, 10.1080/00207721.2022.2053229, 2022.

[J3] H Behzad, MA Sadrnia, A Casavola, A Ramezani, A Darabi,"Multiplicative fault estimation based on the energetic approach for linear discrete-time systems".*International Journal of Control* 95 (3), 703-715, 2022.

[J4] Mohammadreza Kavianpour, Parisa Kavianpour, Ehsan Jahani, Amin Ramezani,"A CNN-BiLSTM Model with Attention Mechanism for Earthquake Prediction",*Digital Signal Processing*, (revised).

[J5] H Saadatinezhad, A Ramezani, M Alizadeh, E Hajimalek,"Fault tolerant load frequency sharing of a multi-area power system using model predictive control", *The Journal of Engineering 2022 (3), 337-347* 33 (2), 025901, 2022.

[J6] Mohammadreza Ghorvei, Mohammadreza Kavianpour, Mohammad TH Beheshti, Amin Ramezani,"An unsupervised bearing fault diagnosis based on deep subdomain adaptation under noise and variable load condition", *Measurement Science and Technology* 33 (2), 025901, 2021.

[J7] R Davoudi, SM Hosseini, A Ramezani,"A Numerical Approach for Stochastic Switched Polynomial Optimal Control and Approximating Control Lyapunov Functions", *Iranian Journal of Science and Technology, Transactions A: Science*, 1-20, 2022.

[J8] M Hadian, A Ramezani, W Zhang,"An interpolation-based model predictive controller for input–output linear parameter varying systems',"*International Journal of Dynamics and Control*, 1-14, 2022.

[J9] M Jahanian, A Ramezani, A Moarefianpour, MA Shoorehdeli,"Robust extended Kalman filtering for nonlinear systems in the presence of unknown inputs and correlated noises",*Optimal Control Applications and Methods* 43 (1), 243-256, 2022.

[J10] SMM Mousavi, A Ramezani,"A New Sliding Mode Observer Design for Fault Estimation in a Class of Nonlinear Fractional-Order Systems Based on the Super-Twisting Algorithm",*Journal of Control, Automation and Electrical Systems* 32 (6), 1531-1539 (2021).

[J11] H Karimi, MTH Beheshti, A Ramezani, H Zareipour,"Intelligent control of islanded AC microgrids based on adaptive neuro-fuzzy inference system",*International Journal of Electrical Power Energy Systems* (2021) 133, 107161.

[J12] A Mohammadi, A Ramezani,"Adaptive analytical sensor fault detection, estimation and tolerant control of quadrotor in the presence of uncertainty and disturbance", *International Journal of System*

Assurance Engineering and Management, 1-15 (2021).

[J13] A Mohammadi, A Ramezani,"Adaptive analytical sensor fault detection, estimation and tolerant control of quadrotor in the presence of uncertainty and disturbance",*International Journal of System Assurance Engineering and Management*, 1-15 (2021).

[J14] Y Abbasi, HR Momeni, A Ramezani,"Robust tube-based MPC with enlarging the region of attraction for tracking of switched systems", *Journal of the Franklin Institute* 358 (17), 8886-8913 (2021).

[J15] A Mirzaei, A Ramezani,"Cooperative optimization-based distributed model predictive control for constrained nonlinear large-scale systems with stability and feasibility guarantees",*ISA transactions* 116, 81-96 (2021).

[J16] H Safaeipour, M Forouzanfar, A Ramezani," Simultaneous Incipient Faults Diagnosis in the Non-Isothermal Continuous Stirred-Tank Reactor",*Journal of Nonlinear Systems in Electrical Engineering 8 (1)*, 133-154,(2021).

[J17] H Karimi, MTH Beheshti, A Ramezani, H Zareipour,"Intelligent control of islanded AC microgrids based on adaptive neuro-fuzzy inference system",*International Journal of Electrical Power Energy Systems* , 133, 107161, 2021.

[J18] A Mirzaei, A Ramezani,"Distributed model predictive control for nonlinear large-scale systems based on reduced-order cooperative optimisation",*International Journal of Systems Science* 52 (12), 2427-2445,2021.

[J19] M Jahanian, A Ramezani, A Moarefianpour, M Aliari Shouredeli,"Gas pipeline leakage detection in the presence of parameter uncertainty using robust extended Kalman filter",*Transactions of the Institute of Measurement and Control* 43 (9), 2044-2057, 2020.

[J20] N Ebrahimi, S Ozgoli, A Ramezani," Model-free high-order terminal sliding mode controller for Lipschitz nonlinear systems Implemented on Exoped® exoskeleton robot",*International Journal of Systems Science* 52 (5), 1061-1073, 2020.

[J21] H Safaeipour, M Forouzanfar, A Ramezani," Incipient fault detection in nonlinear non-Gaussian noisy environment",*Measurement* 174, 109008, 2020.

[J22] Amin Ramezani, Abolghasem Sardashti," Fault tolerant control of islanded AC microgrids under sensor and communication link faults using online recursive reduced-order estimation", *International Journal of Electrical Power Energy Systems* 126 (A), 106578, 2020.

[J23] H Saadatinezhad, A Ramezani, M Alizadeh, E Hajimalek,"Fault tolerant load frequency sharing of a multi-area power system using model predictive control", *The Journal of Engineering.*, 2020.

[J24] M Alizadeh, A Ramezani, H Saadatinezhad Fault tolerant control in ,"an unmanned bicycle robot via sliding mode theory", *IET Cyber-Systems and Robotics.*, 2020.

[J25] M Hadian, A Ramezani, W Zhang," Robust Model Predictive Controller Using Recurrent Neural Networks for Input–Output Linear Parameter Varying Systems", *Electronics* 10 (13), 1557, 2020.

[J26] A Mohammadi, A Ramezani," An Analytical Robust Sensor Fault Detection and Fault Tolerant Control in Quadrotor", *Automatic Control and Computer Sciences* 55 (1), 38-52, 2020.

[J27] A Moradmand, M Dorostian, A Ramezani, A Sajadi, B Shafai,"Fault-tolerant control of inverter for the integration of solar PV under abnormal conditions",*The Journal of Engineering*, (11), 1112-1122, 2020 .

[J28] F Akbarian, A Ramezani, MT Hamidi-Beheshti, V Haghighat," Advanced algorithm to detect stealthy cyber attacks on automatic generation control in smart grid", *IET Cyber-Physical Systems: Theory Applications* 5 (4), 351-358, 2019.

[J29] M Mohseni, A Ramezani, M Siahi," Fault Estimation Based on an Adaptive Observer for a Class of Uncertain Nonlinear Descriptor Systems",*Automatic Control and Computer Sciences* 54 (6), 513-528, 2019.

[J30] N Ebrahimi, S Ozgoli, A Ramezani," Model free sliding mode controller for blood glucose control: Towards artificial pancreas without need to mathematical model of the system", *Computer Methods and Programs in Biomedicine*, 195, 105663, 2019.

[J31] N Ebrahimi, S Ozgoli, A Ramezani," Data-driven sliding mode control: a new approach based on optimization", *International Journal of Control* 93 (8), 1980-1988, 2019.

[J32] M Naserian, A Ramazani, A Khaki-Sedigh, A Moarefianpour," Fast terminal sliding mode control for a nonlinear multi-agent robot system with disturbance", *Systems Science Control Engineering* 8 (1), 328-338, 2019.

[J33] A Olama, M Shasadeghi, A Ramezani, M Khorramizadeh, PRC Mendes," Ellipsoidal Lyapunov-based hybrid model predictive control for mixed logical dynamical systems with a recursive feasibility guarantee", *Transactions of the Institute of Measurement and Control*, 41 (9), 2475-2487, 2019.

[J34] A Ramezani, B Safarinejadian," A modified fractional-order unscented Kalman filter for nonlinear fractional-order systems",*Circuits, Systems, and Signal Processing*, 37 (9), 3756-3784, 2018.

[J35] M Moradi, A Chaibakhsh, A Ramezani," An intelligent hybrid technique for fault detection and condition monitoring of a thermal power plant", *Applied Mathematical Modelling*, 60, 34-47, 2018.

[J36] M Moradi, A Chaibakhsh, A Ramezani, "Early fault detection in transient conditions for a steam power plant subsystem using support vector machine", *Modares Mechanical Engineering*, 16 (10), 405-411, 2017.

[J37] A Ramezani, B Moshiri, AR Kian, BN Aarabi, B Abdulhai," Distributed maximum likelihood estimation for flow and speed density prediction in distributed traffic detectors with Gaussian mixture model assumption", IET Intelligent Transport Systems, 6 (2), 215-222, 2012.

[J38] A Ramezani, B Moshiri, AR Khan, B Abdulhai," Design of an adaptive maximum likelihood estimator for key parameters in macroscopic traffic flow model based on expectation maximum algorithm", *IET science, measurement technology*, 5 (5), 189-197, 2011.

[J39] A Ramezani, B Moshiri, B Abdulhai, AR Kian," Estimation of free flow speed and critical density in a segmented freeway using missing data and Monte Carlo-based expectation maximisation algorithm", *IET control theory applications*, 5 (1), 123-130, 2011.

[J40] E Jafari, B Moshiri, K Salahshoor, A Ramezani," Real Data Testing of Model Parameter Estimation Methods for Macroscopic Traffic Flow Model", *IFAC Proceedings*, Volumes 43 (16), 419-424, 2011.

Some Selected Conference papers (in order of publication year):

[C1] Forouzan Fallah, Amin Ramezani, Ali Mehrizi-Sani'"Integrated Fault Diagnosis and Control Design for DER Inverters using Machine Learning Methods",*The 2022 IEEE Power Energy Society (PES) General Meeting (GM)* ,Denver, Colorado, 17 – 21 July 2022 .

[C2] R Rajaei, A Bagheri, A Ramezani, SP Cornelius, J Gao," Designing pinning network controllability for interdependent dynamical networks", *Annual American Control Conference (ACC)*, 3478-3483, June 27-29 at the Wisconsin Center, Milwaukee, WI., 2018 .

[C3] R Rajaei, A Ramezani, B Shafai," Computing structural controllability of linearly-coupled complex networks", *IEEE High Performance Extreme Computing Conference (HPEC)*, 1-6, 12 - 14 September 2017 Westin Hotel, Waltham, MA USA., 2017.

[C4] R Davoudi, SM Hosseini, A Ramezani," A semidefinite programming approach for stochastic switched optimal control problems", *2019 IEEE 58th Conference on Decision and Control (CDC)*, 2503-2508, Nice, France - December 11th-13th 2019.

[C5] AM Erfanian, A Ramezani,"Using Deep Learning Network for Fault Detection in UAV",*8th International Conference on Control, Instrumentation and Automation (ICCIA)*, IEEE index,Tehran , Iran, 2022.

[C6] Mohammadreza Kavianpour, Mohammadreza Ghorvei, Parisa Kavianpour, Amin Ramezani, Mohammad TH Beheshti,"An Intelligent Gearbox Fault Diagnosis under Different Operating Conditions using Adversarial Domain Adaptation",*8th International Conference on Control, Instrumentation and Automation (ICCIA)*, IEEE index,Tehran , Iran, 2022.

[C7] M Ghorvei, M Kavianpour, MTH Beheshti, A Ramezani,"Synthetic to Real Framework based on Convolutional Multi-Head Attention and Hybrid Domain Alignment",*8th International Conference on Control, Instrumentation and Automation (ICCIA)*, IEEE index,Tehran , Iran, 2022.

[C8] P Kavianpour, M Kavianpour, E Jahani, A Ramezani,"Earthquake Magnitude Prediction using Spatia-temporal Features Learning Based on Hybrid CNN-BiLSTM Model",*2021 7th International Conference on Signal Processing and Intelligent Systems (ICSPIS),*, IEEE index,Tehran , Iran, 2021.

[C9] S Pashaee, A Ramezani, M Ekresh, S Jorkesh ,"Fault Diagnosing Of An Induction Motor Based On Signal Fusion Using One-Dimensional Convolutional Neural Network",*2021 7th International Conference on Signal Processing and Intelligent Systems (ICSPIS),*, IEEE index,Tehran , Iran, 2021.

[C10] M Kavianpour, M Ghorvei, A Ramezani, MTH Beheshti,"Intelligent Fault Diagnosis of Rolling BearingBased on Deep Transfer Learning Using Time-Frequency Representation",*2021 7th International Conference on Signal Processing and Intelligent Systems (ICSPIS),*, IEEE index,Tehran , Iran, 2021.

[C11] MM Delbari, MTH Beheshti, A Ramezani, S Ozgoli,"Time delay sensitivity analysis in a Wireless Network Control System using LMI approach", *9th Asian Control Conference (ASCC)*, 1-4, Istanbul, Turkey , 2013.

[C12] A Ramezani, B Moshiri," The traffic condition likelihood extraction using incomplete observation in

distributed traffic loop detectors", *14th International IEEE Conference on Intelligent Transportation*, Vanvouver, Canada, 2011 .

[C13] M Ghadimi, A Ramezani, K Bozorgi", Energy efficiency and power quality optimization using a modified capacitor bank: An Industrial Case Study", *Third UKSim European Symposium on Computer Modeling and Simulation*, 384-388,25-27 Nov. 2009, Athens, Greece, 2009.

[C14] S Bahrampour, S Ghorbanpour, A Ramezani," Combination of Breeding Swarm Optimization and Backpropagation Algorithm for Training Recurrent Fuzzy Neural Network", *5th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, 314-317,11-15 May 2008, Funcal, Madrid, Portugal, 2008.

TMU, 2017,2019

ACTIVE RESEARCH INTERESTS

* Fault Detection and Diagnosis and Fault Tolerant Control Systems
* Reinforcement Learning and Data Driven Control
* Predictive Control Application in renewable energy and Power Systems
* Machine Learning Application and Implementation

TEACHING EXPERIENCE

*Engineering mathematics, elctrical circuit design, electronic device design, linear control system design, stochastic optimization, linear algebra, digital control system design, discrete signal processing, instrumentation, process control, Fault Tolerant Control Systems, Model-based Predictive Control, Hybrid Systems Control, Stochastic Process Control, Industrial Control Software,Robotic Systems,Smart Sensors systems, Game Theory, Hybrid Systems, Nonlinear Control Systems

RESEARCH ADVISING

the list for active ones. I have more than 100 Alumnis

PhD Students:

Mohamad Reza Kavianpour (September 2018)
Title of Dissertation: Novel Approaches Development in Fault Diagnosis Systems based on Transfer Deep Learning

Hoshang Jafari (September 2016)
Title of Dissertation: Integrated Fault estimation and Control Design for LPV Systems

Mohamad Reza Bitarafan (September 2017)
Title of Dissertation: MPC Design for Hybrid System with Stochastic Swithching Modes

MS Students :

Fatmeh Keshvari (September 2021)
Title of Thesis: Joint Angle Optimization of Knee in Lower Extremity Rehabilitation Exoskeletons robot Using Deep Reinforcement Learning

Sakineh Pashaee (September 2020)

Title of Thesis: Learning Based Fault Diagnosis Under Imperfection Information

Mina Ekresh (September 2020)
Title of Thesis: Transfer Learning Approaches in Pipeline Leackage Detection

Leila Sajedi (September 2020)
Title of Thesis: Machine learning–based Directed Drug Delivery by Nano-Robots in Cancer Therapy

Forouzan Falah (September 2018)
Title of Thesis: Deep Learning Based FTC for Parralal Inverters in Microgrid

Marziyeh Sabet (September 2019)
Title of Thesis: Energy management of smart power grid in critical conditions via federated learning methods
Title of Thesis: Development of Exoped robot model in Coppliasim simulator environment and design of joint drive control based on deep reinforcement learning network

SERVICES

Committee Chair/Member:

Member of board, Control chapter, IEEE Iran Section. 2018-present.

Member of Executive Committee, IEEE Iran Section. 2018-present.

Member of Executive Committee, Iranian Conference on Control, Instrumentation and Automation (ICCIA). 2015-present.

Member of Scientific Committee, Iranian Conference on Electrical Engineering(ICEE). 2015-present.

Reviewer for Journals:

Transaction of Institute of Measurement and Control, IEEE Transactions on Automatic Control, IEEE Open Access, IEEE Transactions on Control of Network Systems,Optimal Control and Applied Mathematics, SIAM Journal on Control and Optimization, ISA Transaction, Journal of Process Control, IEEE Control Systems Letters, Systems & Control Letters

Reviewer for Conferences:

IEEE Conference on Decision and Control (CDC), American Control Conference (ACC), Power and Energy Systems (PES), European Control Conference (ECC), Mediterranean Conference on Control & Automation (MED), Iranian Conference on Control, Instrumentation and Automation (ICCIA)

Others

Languages:

• English: Fluent in 4 Skills.

• Persian: Native.

Software:

• Professional programming MATLAB & Python (TensorFlow, SikitLearn, Numpy, SciPy, Pytorch, Keras)
• All my reported documents generated basically by Latex
• Professional Operator of Windows operation system
• Professional use of o Microsoft Office, including Word, Excel, Visio, MSP and PowerPoint
• MATHEMATICA (Advanced Mathematics Software)
• Programming FPGA, Spice (electronic design software)
• Professional Operator of industrial control software (PLC)