

# CURRICULUM VITAE

## Erdal KAYACAN

Assistant Professor  
Nanyang Technological University, Singapore  
Department of Mechanical and Aerospace Engineering  
Associate Editor of the IEEE Transactions on Fuzzy Systems  
Senior Member of IEEE

### PERSONAL DATA

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GOOGLE SCHOLAR: <https://scholar.google.com.sg/citations?user=50TLpi4AAAAJ&hl=en>

### WORK EXPERIENCE

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<i>Current</i> MAR 2014	<b>Assistant Professor</b> , NANYANG TECHNOLOGICAL UNIVERSITY, Singapore <i>School of Mechanical and Aerospace Engineering</i>
MAR 2014 SEP 2011	<b>Post-doctoral Researcher</b> , KATHOLIEKE UNIVERSITEIT LEUVEN, Belgium <i>Division of Mechatronics, Biostatistics and Sensors</i>
SEP 2011 AUG 2005	<b>Teaching Assistant</b> , BOGAZICI UNIVERSITY, Istanbul, Turkey <i>Department of Electrical and Electronic Engineering</i>
DEC 2009 SEP 2009	<b>Visiting Ph.D. scholar</b> , UNIVERSITY OF OSLO, Oslo, Norway <i>Department of Informatics</i>
FEB 2005 SEP 2004	<b>Electrical Engineer</b> , ARCELIK CORPORATION, Istanbul, Turkey <i>Department of Research and Development</i>

### EDUCATION

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SEP 2011	<b>Ph.D.</b> in ELECTRICAL AND ELECTRONICS ENGINEERING, Bogazici University, Istanbul Major: Control theory Advisor: Prof. Okyay KAYNAK
JUN 2006	<b>M.Sc.</b> in SYSTEMS AND CONTROL ENGINEERING, Bogazici University, Istanbul Major: Control theory Advisor: Prof. Okyay KAYNAK
JUN 2003	<b>B.Sc.</b> in ELECTRICAL ENGINEERING, Istanbul Technical University, Istanbul Major: Power electronics

### RESEARCH INTERESTS

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My main research interests and contributions lie within the areas of control systems, computational intelligence and robotic vision with applications in guidance, control and automation of unmanned ground and aerial vehicles.

## RESEARCH IMPACT (BY 24.11.2017)

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	Google Scholar	Scopus	Web of Science
Total citation	1822	1294	820
H-index	21	18	15

## PROJECTS DIRECTED (ONGOING)

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OCT 2017	Precise landing for unmanned aerial vehicles
JUL 2015	by ST Eng-NTU Corporation Laboratory <i>470,000SGD</i>
DEC 2017	Fuzzy neural network-based learning control of unmanned aerial vehicles
JAN 2016	by ST Eng-NTU Corporation Laboratory <i>130,000SGD</i>
JAN 2024	Design of lightweight UAV for 3D Printing
JAN 2014	by NRF Medium-Sized Centre (MSC) <i>2,052,500SGD</i>

## PROJECTS DIRECTED (COMPLETED)

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JAN 2017	Quality Inspection and Assessment Robot (Quicabot)
JULY 2015	by JTC Corporation - NRF Singapore <i>821,160SGD</i>
MAR 2017	Learning control algorithms for unmanned aerial vehicles
MAY 2014	by Nanyang Technological University (Start up grant) <i>100,000SGD</i>
AUG 2017	Model predictive control-moving horizon estimation framework as applied to tilt rotor UAVs and its experimental evaluation
MAR 2015	by Ministry of Education Academic Research Funding Tier 1 <i>88,000SGD</i>

## TEACHING EXPERIENCE

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PRESENT	MA3703 Flight Dynamics
AUG 2014	Undergrad Year 3
PRESENT	MA4705 Aircraft Navigation and Flight Computers
AUG 2014	Undergrad Year 4
PRESENT	MA3005-MP3001-MA3705 Control Theory
JAN 2016	Undergrad Year 3
PRESENT	MA6643 Advanced Flight Dynamics
AUG 2016	Grad level

## AFFILIATIONS

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JAN 2005 - PRESENT	IEEE Member
MAR 2012 - PRESENT	IEEE Senior Member
JAN 2015 - PRESENT	IEEE Computational Intelligence Society Member

## SERVICE

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JAN 2017 - PRESENT	Associate Editor, <b>IEEE Transactions on Fuzzy Systems</b>
JAN 2016 - PRESENT	IEEE Singapore Computational Intelligence Society Chapter Committee
JAN 2015 - JAN 2016	IEEE Singapore Section Executive Committee Member

## INVITED LECTURES AND TALKS

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- 13 OCT 2017 IEEE Singapore Section CIS Society Tutorial, **Nanyang Technological University**, Singapore  
Title: *Towards more interpretable type-2 fuzzy logic controls as applied to aerial robotics*
- 9-12 JUL 2017 Tutorial in **FUZZ IEEE 2017–IEEE International Conference on Fuzzy Systems**,  
Title: *Vision-Based Control of UAVs Using Type-1 and Type-2 FLCs with ROS*
- 4 NOV 2016 IEEE Singapore Section CIS Society Tutorial, **Nanyang Technological University**, Singapore  
Title: *Type-2 fuzzy neural network-based control*
- 23-24 MAY 2016 Research Seminar, **Istanbul Technical University**, Istanbul  
Title: *Type-2 fuzzy neural network-based control*
- 16-20 NOV 2015 Research Seminar, **The University of Nottingham**, United Kingdom  
Title: *Type-2 fuzzy neural network-based control*
- 11-15 FEB 2008 Lecture Tutorial, **ISESCO-Training Workshop on Mechatronics**, Morocco
- 16-20 NOV 2007 Lecture Tutorial, **ISESCO-Mechatronics and its Applications to Enhance Industrial Productivity**, Indonesia

## FELLOWSHIPS

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- SEP-DEC 2009 Research Fellowship of Norway Research Council, **University of Oslo**, Norway

## LANGUAGES

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- TURKISH: Native  
ENGLISH: Fluent  
DUTCH: Elementary  
FRENCH: Beginner

## NUMBER OF POST-DOCTORATES AND PHDS

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- Yunus Govdeli (PhD, August 2015 intake): Autonomous Flight Control of a 3D Printed Lightweight Flying Wing VTOL Unmanned Aerial Vehicle
- Efe Camci (PhD, August 2015 intake): Enhanced Path Planning of UAVs By Artificial Intelligence Methods
- Nursultan Imanberdiyev (PhD, August 2015 intake): Towards Aerial Manipulation: Intelligent Control approach for Unmanned Aerial Manipulators
- Mohit Mehndiratta (PhD, January 2016 intake): Online Learning-based Control of Unmanned Aerial Vehicles Incorporating Dynamic Optimisation
- Andriy Sarabakha (PhD, January 2016 intake): Learning Control of Unmanned Aerial Vehicles Using Artificial Intelligence-Based Methods
- Wong Zhuo Wei (PhD, January 2016 intake): Monitoring of Additive Manufacturing Process With Machine Learning Approaches

## CONFERENCE RELATED ACTIVITIES

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- Tutorial Organizer FUZZ IEEE 2017 – IEEE International Conference on Fuzzy Systems, Naples, Italy, 9-12 July 2017,  
*Vision-Based Control of UAVs Using Type-1 and Type-2 FLCs with ROS*  
by Erdal Kayacan and Changhong Fu
- Special Session Organizer FUZZ IEEE 2017 – IEEE International Conference on Fuzzy Systems, Naples, Italy, 9-12 July 2017,  
*Type-1 and type-2 neuro fuzzy systems: quo vadis?*  
by Erdal Kayacan; Mojtaba Ahmadih Khanesar and Mohammad Biglarbegian

- Special Session Organizer FUZZ IEEE 2017 – IEEE International Conference on Fuzzy Systems, Naples, Italy, 9-12 July 2017,  
*Advances to fuzzy logic control*  
by Tufan Kumbasar; Erdal Kayacan and Hao Ying
- Special Session Organizer IEEE TENCON 2016 – Technologis for Smart Nation, Marina Bay Sands, Singapore, 22-25 November 2016,  
*Computational Intelligence Techniques and Applications*  
by Justin Dauwels, Lipo Wang, Erdal Kayacan; Teck Hou Teng
- Publication Co-Chair IEEE ASCC 2013 - Asian Control Conference  
23-26 June, Istanbul, Turkey
- Special Session Organizer IEEE ASCC 2013 - Asian Control Conference Istanbul, 23-26 June 2013,  
*Complex Mechatronic Systems*  
by Erdal Kayacan, Peter Vrancx and Wouter Saeys
- Special Session Organizer IEEE ASCC 2013 - Asian Control Conference Istanbul, 23-26 June 2013,  
*Fuzzy Logic Systems and Applications*  
by Erdal Kayacan and Mojtaba A. Khanesar
- Publication Co-Chair SMC 2010 - IEEE International Conference on Systems, Man, and Cybernetics  
10–13 October, Istanbul, Turkey
- Local organizing committee ALCOSP 2010 - IFAC International Workshop on Adaptation and Learning in  
Control and Signal Processing  
26–28 August, Antalya, Turkey
- Local organizing committee PSYCO 2010 - IFAC International Workshop on Periodic Control Systems  
26–28 August, Antalya, Turkey
- Local organizing committee ITHET 2010 - International Conference on Information Technology Based  
Higher Education and Training  
29 April–1st May 2010 August, Cappadocia, Turkey
- Publication Chair DEST 2009 - IEEE International Conference on Digital Ecosystems and  
Technologies  
31th May-3rd June 2009, Istanbul, Turkey
- Publication Chair ICONS 2009 - IFAC International Conference on Intelligent Control Systems  
and Signal Processing  
21-23 Sept 2009, Istanbul, Turkey
- Publication Chair ISOT 2009 - International Symposium on Optomechatronic Technologies  
21-23 Sept 2009, Istanbul, Turkey
- Local organizing committee VECIMS 2008 - IEEE Conference on Virtual Environments, Human-Computer  
Interfaces and Measurement Systems  
14-16 July 2008, Istanbul, Turkey
- Local organizing committee CIMSA 2008 - IEEE Conference on Computational Intelligence for Measurement  
Systems and Applications  
14-16 July 2008, Istanbul, Turkey

Local organizing committee VSS 2008, - 10th International Workshop on Variable Structure Systems  
8-10 June 2008, Antalya, Turkey

Local organizing committee IEMDC 2007 - IEEE International Electric Machines and Drives Conference  
3-5 May 2007, Antalya, Turkey

## LIST OF PUBLICATIONS

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### Books Indexed by SCI or SCIE (in English):

1. Erdal Kayacan and Mojtaba A. Khanesar, "Fuzzy Neural Networks for Real Time Control Applications, Concepts, Modeling and Algorithms for Fast Learning", 1st Edition, **Butterworth-Heinemann**, Print Book ISBN:9780128026878. (17 Sept 2015)

### Book Chapters Indexed by SCI or SCIE (in English):

4. Mohit Mehndiratta, Erkan Kayacan, Siddharth Patel, Erdal Kayacan and Girish Chowdhary, "Learning-based Fast Nonlinear Model Predictive Control for Custom-made 3D Printed Ground and Aerial Robots", **Handbook of Model Predictive Control**, Editors: Sasa V. Rakovic, William S. Levine, Springer, (In Press)
3. Erkan Kayacan, Erdal Kayacan, I-Ming Chen, Herman Ramon, and Wouter Saeys, "On The Comparison of Model-Based and Model-Free Controllers in Guidance, Navigation and Control of Agricultural Vehicles", Editors: Hani Hagrass, Robert John and Oscar Castillo, **Studies in Computational Intelligence**, Springer, (In Press)
2. I-Ming Chen, Ehsan Asadi, Jiancheng Nie, Rui-Jun Yan, Wei Chuan Law, Erdal Kayacan, Song Huat Yeo, Kin Huat Low, Gerald Seet and Robert Tiong, "Innovations in Infrastructure Service Robots", ROMANSY 21 - Robot Design, Dynamics and Control: Proceedings of the 21st CISM-IFTOMM Symposium, **Springer International Publishing**, Editor: Vincenzo Parenti-Castelli and Werner Schiehlen, June 20-23, Udine, Italy, pp. 3-16, 2016. Print Book ISBN: 978-3-319-33713-5.
1. Mojtaba A. Khanesar and Erdal Kayacan, "Controlling the Pitch and Yaw Angles of a 2-DOF Helicopter Using Interval Type-2 Fuzzy Neural Networks", Recent Advances in Sliding Modes: From Control to Intelligent Mechatronics, Studies in Systems, Decision and Control, **Springer International Publishing**, vol. 24, pp. 349-370, 2015. Print Book ISBN: 978-3-319-18289-6.

### Journal Papers Indexed by SCI or SCIE (in English):

39. Andriy Sarabakha, Changhong Fu, Erdal Kayacan and Tufan Kumbasar, "Type-2 Fuzzy Logic Controllers Made Even Simpler: From Design to Deployment in Real-Time for Quadcopter UAVs", **IEEE Trans. on Industrial Electronics** (In press).
38. Efe Camci, Devesh Raju Kripalani, Linlu Ma, Erdal Kayacan and Mojtaba Ahmadiieh Khanesar, "An Aerial Robot for Rice Farm Quality Inspection With Type-2 Fuzzy Neural Networks Tuned by Particle Swarm Optimization-Sliding Mode Control Hybrid Algorithm, **Swarm and Evolutionary Computation** (In press).
37. Anna Prach and Erdal Kayacan, "An MPC-based Position Controller for a Tilt-Rotor Tricopter VTOL UAV", **Optimal Control, Applications and Methods**, 2017; 1-14. <https://doi.org/10.1002/oca.2350>
36. Andriy Sarabakha, Nursultan Imanberdiyev, Erdal Kayacan, Mojtaba Ahmadiieh Khanesar and Hani Hagrass, "Novel Levenberg-Marquardt Based Learning Algorithm for Unmanned Aerial Vehicles", **Information Sciences**, vol.417, pp. 361-380, November 2017
35. Yiqun Dong, Efe Camci and Erdal Kayacan, "Faster RRT-based Nonholonomic Path Planning in 2D Building Environments Using Skeleton-constrained Path Biasing", **Journal of Intelligent & Robotic Systems**, pp. 1-12, May 2017
34. Mohit Mehndiratta and Erdal Kayacan, "Receding Horizon Control of 3 DOF Helicopter Using Online Estimation of Aerodynamic Parameters", **Proceedings of the Institution of Mechanical engineers Part G-Journal of Aerospace Engineering**, pp. 1-12, April 2017.
33. Ran Duan, Changhong Fu and Erdal Kayacan, "Tracking-Recommendation-Detection", **Engineering Applications of Artificial Intelligence** vol.64, pp.128-139, September 2017

32. Utku Eren, Anna Prach, Basaran Bahadir Kocer, Sasa Rakovic, Erdal Kayacan, and Behcet Acikmese, "Model Predictive Control in Aerospace Systems: Current State and Opportunities" **AIAA Journal of Guidance, Control and Dynamics**, vol.40, no.7, pp.1541-1566, June 2017
31. Lily Liu, Rui-Jun Yan, Varun Maruvanchery, Erdal Kayacan, I-Ming Chen and Tiong Lee Kong, "TLCAF: Transferred Learning on Convolutional Activation Feature as Applied to a Building Quality Assessment Robot", **International Journal of Advanced Robotic Systems**, vol.14, no.3, pp.1-12, June 2017
30. Erdal Kayacan and Reinaldo Maslim, "Type-2 Fuzzy Logic Trajectory Tracking Control of Quadrotor VTOL Aircrafts With Elliptic Membership Functions", **Mechatronics, IEEE/ASME Transactions on**, vol.22, no. 1, pp. 339-348, February 2017
29. Erdal Kayacan, Mojtaba Ahmadiéh Khanesar, Jaime Rubio Hervas and Mahmut Reyhanoglu, "Learning control of fixed-wing unmanned aerial vehicles using fuzzy neural networks", **International Journal of Aerospace Engineering**, Article ID 5402809, vol. 2017 (2017), pp.1-12.
28. Rui-Jun Yan, Jing Wu, Ji Yeong Lee, Abdul Manan Khan, Chang-Soo Han, Erdal Kayacan, I-Ming Chen "A Novel Method for 3D Reconstruction: Division and Merging of Overlapping B-spline surfaces", **Computer-Aided Design**, vol.81, pp.14-23, December 2016
27. Changhong Fu, Ran Duan, Dogan Kircali and Erdal Kaycan, "Onboard Robust Visual Tracking for UAVs Using a Reliable Global-Local Object Model", **Sensors**, vol.16, no.9, pp. 1406, 2016
26. Saima Hassan, Mojtaba Ahmadiéh Khanesar, Erdal Kayacan, Jafreezal Jaafar and Abbas Khosravi "Optimal design of adaptive type-2 neuro-fuzzy systems: A review", **Applied Soft Computing**, vol.44, pp.134-143, July 2016
25. Tien Thanh Nguyen, Koenraad Vandevoorde, Niels Wouters, Erdal Kayacan, Josse De Baerdemaeker and Wouter Saeys "Detection of red and bicoloured apples on tree with an RGB-D camera", **Biosystems Engineering**, vol.146, pp. 33-44, June 2016
24. Jaime Rubio Hervas, Mahmut Reyhanoglu, Hui Tang and Erdal Kayacan, "Nonlinear control of fixed-wing UAVs in presence of stochastic winds", **Communications in Nonlinear Science and Numerical Simulation**, vol.33, pp.57-69, April 2016
23. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys, "Towards agrobots: Identification of the yaw dynamics and trajectory tracking of an autonomous tractor", **Computers and Electronics in Agriculture**, vol.115, pp.78-87, July 2015
22. Mojtaba A. Khanesar, Erdal Kayacan, Mahmut Reyhanoglu and Okyay Kaynak, "Feedback Error Learning Control of Magnetic Satellites Using Type-2 Fuzzy Neural Networks With Elliptic Membership Functions", **Cybernetics, IEEE Transactions on**, vol.45, no.4, pp.858-868, April 2015
21. Erkan Kayacan, Erdal Kayacan and Mojtaba A. Khanesar, "Identification of Nonlinear Dynamic Systems Using Type-2 Fuzzy Neural Networks - A Novel Learning Algorithm and a Comparative Study", **Industrial Electronics, IEEE Transactions on**, vol.62, no.3, pp.1716-1724, March 2015
20. Erdal Kayacan, Erkan Kayacan, Herman Ramon, Okyay Kaynak and Wouter Saeys, "Towards Agrobots: Trajectory Control of an Autonomous Tractor Using Type-2 Fuzzy Logic Controllers", **Mechatronics, IEEE/ASME Transactions on**, vol.20, no.1, pp.287-298, February 2015
19. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys, "Robust Tube-based Decentralized Nonlinear Model Predictive Control of an Autonomous Tractor-Trailer System", **Mechatronics, IEEE/ASME Transactions on**, vol.20, no.1, pp.447-456, February 2015
18. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys, "Learning in Centralized Nonlinear Model Predictive Control: Application to an Autonomous Tractor-Trailer System", **IEEE Transactions on Control Systems Technology**, vol.23, no.1, pp. 197-205, January 2015
17. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys, "Distributed nonlinear model predictive control of an autonomous tractor-trailer system", **Mechatronics**, vol.24, no.8, pp. 926-933, December 2014
16. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys, "Nonlinear Modeling and Identification of an Autonomous Tractor-Trailer System", **Computers and Electronics in Agriculture**, v.106, pp 1-10, August 2014

15. Kenny Nona, Bart Lenaerts, Erdal Kayacan, Wouter Saeys, “Bulk compression characteristics of straw and hay”, **Biosystems Engineering**, v. 118, pp. 194-202, February 2014
14. Tom Kraus, Joachim Ferreau, Erdal Kayacan, Herman Ramon, Josse De Baerdemaeker, Moritz Diehl, Wouter Saeys, “Moving horizon estimation and nonlinear model predictive control for autonomous agricultural vehicles”, **Computers and Electronics in Agriculture**, v. 98, pp. 25-33, October 2013
13. Rahib H. Abiyev, Okyay Kaynak and Erdal Kayacan, “A Type-2 Fuzzy Wavelet Neural Network for System Identification and Control”, **Journal of The Franklin Institute**, v.350, no:7, pp. 1658-1685, September 2013
12. Erkan Kayacan, Erdal Kayacan, Herman Ramon and Wouter Saeys , “Adaptive Neuro-Fuzzy Control of a Spherical Rolling Robot Using Sliding Mode Control Theory-Based Online Learning Algorithm”, **IEEE Transactions on Systems, Man, and Cybernetics Part B: Cybernetics**, v.43, no:1, pp. 170-179, February 2013
11. Mojtaba A. Khanesar, Erdal Kayacan, Mohammad Teshnehlab and Okyay Kaynak, “Extended Kalman Filter Based Learning Algorithm for Type-2 Fuzzy Logic Systems and its Experimental Evaluation”, **IEEE Transactions on Industrial Electronics**, v.59, no:11, pp. 4443-4455, November 2012
10. Erdal Kayacan, Ozkan Cigdem and Okyay Kaynak, “Sliding Mode Control Approach for Online Learning as Applied to Type-2 Fuzzy Neural Networks and its Experimental Evaluation”, **IEEE Transactions on Industrial Electronics**, v.59, no:9, pp. 3510-3520, September 2012
9. Erdal Kayacan and Okyay Kaynak, “Sliding Mode Control Theory-based Algorithm for Online Learning in Type-2 Fuzzy Neural Networks: Application to Velocity Control of an Electro Hydraulic Servo System”, **International Journal of Adaptive Control and Signal Processing**, v. 26, no: 7, pp. 645-659, July 2012
8. Erdal Kayacan, Yesim Oniz, Ayse C. Aras, Okyay Kaynak and Rahib H. Abiyev, “A Servo System Control with Time-varying and Nonlinear Load Conditions Using Type-2 TSK Fuzzy Neural System”, **Applied Soft Computing**, v.11, no:8, pp. 5735-5744, December 2011
7. Mojtaba A. Khanesar, Erdal Kayacan, Mohammad Teshnehlab, and Okyay Kaynak, “Analysis of the Noise Reduction Property of Type-2 Fuzzy Logic Systems Using a Novel Type-2 Membership Function”, **Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on**, v.41, no:5, pp. 1395-1406, October 2011
6. Erdal Kayacan and Okyay Kaynak, “Single-step Ahead Prediction Based on the Principle of Concatenation Using Grey Predictors”, **Expert Systems With Applications**, v.38, no:8, pp. 9499-9505, August 2011
5. Andon V. Topalov, Yesim Oniz, Erdal Kayacan and Okyay Kaynak, “Neuro-Fuzzy Control of Antilock Braking System Using Sliding Mode Incremental Learning Algorithm”, **Neurocomputing**, v.74, no:11, pp. 1883-1893, May 2011
4. Erdal Kayacan, Baris Ulutas and Okyay Kaynak, “Grey System Theory-Based Models in Time Series Prediction”, **Expert System With Applications**, v.37, no:2, pp. 1784-1789, 2010. (*Highly Cited Paper according to Essential Science Indicators in Web of Science*)
3. Erdal Kayacan, Yesim Oniz and Okyay Kaynak, “A Grey System Modeling Approach for Sliding-Mode Control of Antilock Braking System”, **Industrial Electronics, IEEE Transactions on**, v.56, no:8, pp. 3244-3252, August 2009
2. Yesim Oniz, Erdal Kayacan and Okyay Kaynak, “A Dynamic Method to Forecast the Wheel Slip for Antilock Braking System and Its Experimental Evaluation”, **Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on**, v.39, no:2, pp. 551-560, April 2009
1. Erdal Kayacan and Okyay Kaynak, “An Adaptive Grey PID Type Fuzzy Controller Design for a Nonlinear Liquid Level System”, **Transactions of the Institute of Measurement and Control**, v.31, no:1, pp. 33-49, February 2009

#### Conference Papers Indexed by SCI or SCIE (in English):

55. Rui Jun Yan, Erdal Kayacan, I-Ming Chen and Lee Kong Tiong “A Novel Building Post-Construction Quality Assessment Robot: Design and Prototyping”, **2017 IEEE/RSJ International Conference**

- on **Intelligent Robots and Systems (IROS 2017)**, Vancouver, Canada, pp.6020-6026, September 24-28, 2017.
54. Erdal Kayacan, Simon Coupland, Robert John and Mojtaba Khanesar “Elliptic Membership Functions and the Modeling Uncertainty in Type-2 Fuzzy Logic Systems As Applied to Time Series Prediction”, **2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)**, Naples, Italy, pp. 1-7, July 9-12, 2017.
  53. Mojtaba Ahmadih Khanesar and Erdal Kayacan “A Novel Complexity Reduced Levenberge-Marquardt Optimization Algorithm: Application to the Training of Interval Type-2 Fuzzy Systems”, **2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)**, Naples, Italy, pp.1-6, July 9-12, 2017.
  52. Chao Zhang, Claudio Rossi and Erdal Kayacan “Interval Type-2 Fuzzy-Neuro Control of Nonlinear Systems With Proved Overall System Stability”, **2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)**, Naples, Italy, pp.1-6, July 9-12, 2017.
  51. Andriy Sarabakha, Fu Changhong and Erdal Kayacan “Double-Input Interval Type-2 Fuzzy Logic Controllers: Analysis and Design”, **2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)**, Naples, Italy, pp.1-6, July 9-12, 2017.
  50. Changhong Fu, Andriy Sarabakha, Erdal Kayacan, Christian Wagner, Robert John and Jonathan Garibaldi “Similarity-based Non-Singleton Fuzzy Logic Control for Improved Uncertainty Handling in Quadrotor UAVs”, **2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)**, Naples, Italy, pp.1-6, July 9-12, 2017.
  49. Andriy Sarabakha and Erdal Kayacan, “Y6 Tricopter Autonomous Evacuation in an Indoor Environment Using Q-Learning Algorithm”, **2016 IEEE 55th Conference on Decision and Control (CDC)**, ARIA Resort & Casino, Las Vegas, NV, USA, pp. 5992-5997, December 12-14, 2016.
  48. Ran Duan, Changhong Fu and Erdal Kayacan, “Recoverable Recommended Keypoint-aware Visual Tracking Using Coupled-layer Appearance Modelling”, **2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**, Daejeon, South Korea, pp. 4085-4091, October 9-14, 2016.
  47. Efe Camci and Erdal Kayacan, “Y6 Waitress Quadcopter Explores How To Serve Drinks By Reinforcement Learning”, **2016 IEEE Region 10 Conference (TENCON)**, Marina Bay Sands, Singapore, pp. 28-32, November 22-25, 2016.
  46. Rui-Jun Yan, Chin Leong Low, Jinjun Duan, Lili Liu, Erdal Kayacan, I-Ming Chen and Robert Tiong, “Development of a Novel Post-Construction Quality Assessment Robot System”, **The 14th International Conference on Control, Automation, Robotics and Vision (ICARCV)**, Phuket, Thailand, pp.1-6, 13-15 November, 2016.
  45. Bruce Cowan, Changhong Fu, Nursultan Imanberdiyev, Yiqun Dong and Erdal Kayacan, “A Performance Evaluation of Methods for Visual Tracking”, **The 14th International Conference on Control, Automation, Robotics and Vision (ICARCV)**, Phuket, Thailand, pp.1-6, 13-15 November, 2016.
  44. Yiqun Dong, Changhong Fu and Erdal Kayacan, “RRT-based 3D Path Planning for Formation Landing of Quadrotor UAVs”, **The 14th International Conference on Control, Automation, Robotics and Vision (ICARCV)**, Phuket, Thailand, pp.1-6, 13-15 November, 2016.
  43. Nursultan Imanberdiyev, Changhong Fu, Erdal Kayacan and I-Ming Chen, “Autonomous Navigation of UAV by Using Real-Time Model-Based Reinforcement Learning”, **The 14th International Conference on Control, Automation, Robotics and Vision (ICARCV)**, Phuket, Thailand, pp.1-6, 13-15 November, 2016.
  42. Yunus Govdeli, Zhuo Wei Wong and Erdal Kayacan “Additive Manufacturing of Unmanned Aerial Vehicles: Current Status, Recent Advances, and Future Perspectives”, **2nd International Conference on Progress in AM (Pro-AM 2016)**, pp. 39-48, Singapore, 16-19 May 2016
  41. Mohit Mehndiratta, Anna Prach and Erdal Kayacan, “Numerical Investigation of Gaussian Filters with a Combined Type Bayesian Filter for Nonlinear State Estimation”, **10th IFAC Symposium on Nonlinear Control Systems (NOLCOS)**, v. 49, no 18, Monterey, California, USA, pp. 446-453, August 23-25, 2016.



40. Ran Duan, Changhong Fu, Erdal Kayacan and Danda Pani Paudel, "Recommended Keypoint-Aware Tracker: Adaptive Real-time Visual Tracking Using Consensus Feature Prior Ranking", **2016 IEEE International Conference on Image Processing (ICIP)**, Phoenix, AZ, USA, pp. 449-453, September 25-28, 2016.
39. Efe Camci and Erdal Kayacan "Game of Drones: UAV Pursuit-Evasion Game with Type-2 Fuzzy Logic Controllers tuned by Reinforcement Learning", **Fuzzy Systems (FUZZ-IEEE), 2016 IEEE International Conference on**, Vancouver, Canada, pp. 618-625, 24-29 July, 2016.
38. Mohit Mehndiratta, Erdal Kayacan and Tufan Kumbasar "Design and Experimental Validation of Single Input Type-2 Fuzzy PID Controllers as Applied to 3 DOF Helicopter Testbed", **Fuzzy Systems (FUZZ-IEEE), 2016 IEEE International Conference on**, Vancouver, Canada, pp. 1584-1591, 24-29 July, 2016.
37. Changhong Fu, Andriy Sarabakha, Erdal Kayacan, Christian Wagner, Robert John and Jon Garibaldi "A Comparative Study on the Control of Quadcopter UAVs by using Singleton and Non-Singleton Fuzzy Logic Controllers", **Fuzzy Systems (FUZZ-IEEE), 2016 IEEE International Conference on**, Vancouver, Canada, pp. 1023-1030, , 24-29 July, 2016.
36. Erdal Kayacan and Mojtaba Ahmadi Khanesar "Recurrent Interval Type-2 Fuzzy Control of 2-DOF Helicopter With Finite Time Training Algorithm", **12th IFAC Workshop on Adaptation and Learning in Control and Signal Processing (ALCOSP 2016)**, Eindhoven, The Netherlands, vol.49, no.13, Eindhoven - The Netherlands, pp. 293-299,, June 29-July 1, 2016.
35. Anna Prach, Erdal Kayacan and Dennis S. Bernstein "An Experimental Evaluation of the Forward Propagating Riccati Equation to Nonlinear Control of the Quanser 3 DOF Hover Testbed", **The 2016 American Control Conference (ACC 2016)**, Boston, MA, USA, pp. 3710-3715, July 6-8, 2016.
34. Erkan Kayacan, Joshua M. Peschel and Erdal Kayacan "Centralized, Decentralized and Distributed Nonlinear Model Predictive Control of a Tractor-Trailer System: A Comparative Study", **The 2016 American Control Conference (ACC 2016)**, Boston, MA, USA, pp. 4403-4408, July 6-8, 2016.
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