



Jafar Keighobadi PhD

Practical Mechatronics, AI based Control, Measurement Devices and Signal Processing, Fuzzy and Deep Learning with Programming and Implementation on Micro-controller/processor Boards of STM32, ESP32, Beagle-Bone ...

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EDUCATION

Ph.D. Mechanical Engineering, Control Systems, AmirKabir University of Technology (Tehran Polytechnic), Tehran, Iran.

M.S. Mechanical Engineering, AmirKabir University of Technology (Tehran Polytechnic) Tehran, Iran.

B.Sc. Mechanical Engineering, University of Tabriz, Tabriz, Iran.

ACADEMIC EXPERIENCE

Professor	2020 -now		
Associate Professor	2014-2020	Faculty of Mechanical Engineering	University of Tabriz, Tabriz, Iran
Assistant Professor	2008- 2013		
Patent Examiner	2009-now	University of Tabriz	University of Tabriz, Tabriz, Iran.
Lecturer	2009 – 2011	Mechanical Eng. Department	Islamic Azad University, Khoy Branch, West-Azerbaijan, Khoy, Iran.
Guest Lecturer	Jan - July 2006	Mechanic Eng. Department	Zanjan University, Zanjan, Iran.
Lecturer	Sep - Dec 2005	Mechanic Eng. Department	Azad University, Qazvin Branch, Qazvin, Iran.
Lecturer	Sep - Dec 2005	Mechanic Eng. Department	Islamic Azad University, Maragheh Branch, East-Azerbaijan, Maragheh, Iran.
Lecturer	2001 – 2002	Mechanic Eng. Department	Islamic Azad University, Tehran South Branch, Tehran, Iran.

Teaching Courses

Advanced Applications of Artificial Intelligence, Artificial Neural Networks and Deep Learning, Stochastic Nonlinear Estimation and Control, Linear Control, Modern Control, Numerical Analysis, Robust Control; Nonlinear Control, Fuzzy Control, Control Instruments, Inertial Navigation, Linear Programming, Dynamics.

INDUSTRIAL Skills

- ARM STM32F407VGT6 Microcontroller's Programming
- ESP32 Microcontroller
- IMU, Gyroscopes, Accelerometers and Magnetometers
- GPS, GLONASS, GALLILUE, BEIDU Navigation
- Texas Instrument DSP processors
- Linux Beagle-Bone- Board implementation
- INS/GPS Industry Professional
- Classic and Artificial Intelligence Based Control Systems
- Modelling, Identification and Control of Autonomous Vehicles and Mobile Robots
- Kalman Filters, Bayesian Estimation, Optimal Filtering
- Machine Learning and Deep Learning networks
- Vehicle Test, Calibration and Fabrication
- Attitude Determination Systems Design, Manufacturing, Calibration and Testing
- Linear and Nonlinear Estimation Methods Including Kalman, Hinfinity, Sliding Mode, Fuzzy and Artificial Neural Networks, Deep Learning, Artificial Intelligence, Chaos.
- Magnetic Compassing and Calibration
- Data Acquisition, SPI, I2C, ISC, ADC protocols.
- PCB design and Integration

AWARDS/HONORS

Best young researcher of all technical departments University of Tabriz (27 Nov 2011)

Rank 1 out of 120 in PhD entrance exam Amirkabir University of Technology (18 June 2001).

Dissertation, Thesis

- **Ph.D. Dissertation**, “*Robust Estimator Design for Stochastic Attitude-Heading Reference System in Accelerated Maneuvers*”, 319 pages (A low cost Attitude-Heading Reference System has been manufactured and wide range tests of the system have been performed), Mechanical Engineering Department, Amirkabir University of Technology (Tehran Polytechnic), **Supervisors:** Professor Mansour Kabganian and Professor Mohammad J. Yazdanpanah.
- **M.S. Thesis**, “*Design of a new VVT Mechanism for a SI Combustion Engine*”, Mechanical Engineering Department, Amirkabir University of Technology (Tehran Polytechnic), **Supervisors:** Professor Mahdi Akhlaghi and Professor Shahram Azadi.

Selected Journals Reviewing

- About 20 IEEE Transactions
- About 40 Elsevier Journals
- A lot Journals of Wiley, Springer, Emerald Journals
- Hundreds of International and Domestic Journals/Conferences/Patents

SOFTWARE/HARDWARE SKILLS

- C, C++, C#, Python
- TMS/ARM Texas Instruments Micro-Processors Programming in Windows and Linux.
- STM32 and ESP32 Micro-Controllers Programming

- Programming of Linux based Boards like Beagle Bone for GNC Applications
- MATLAB, Simulink, Real-Time Workshop/ XPC Target
- CoppeliaSim

RESEARCH INTERESTS

Microcontrollers/Microprocessors and Applications for Artificial Intelligence, Quantum Measurements, MEMS Sensors/Actuators; GNSS, Control Systems, Kalman Filter; Autonomous Robots; Design and Implementation of Intelligent Systems; Robust Filtering/Control; Stochastic Nonlinear Estimation and Control, Mathematical Algorithms of Chaos, Artificial Intelligence, Fuzzy, Artificial Neural Networks and Deep Learning; FPGA, DSP, ARM programming;

Supervisor of PhD and MSC Thesis

PhD:

- 1- Design and control of quantum sensors based on a new filtering method for inertial positioning, Farnaz Imani, 2026
- 2- Implementing and increasing the performance and prediction accuracy of the INS-GNSS positioning system using intelligent estimation and deep learning, Reza Safvat, 2026
- 3- Application of artificial intelligence in graphene-reinforced nanocomposite lubricants to improve wear resistance in deep drawing dies with temperature effects, Zamman Khalil Ibrahim, 2026
- 4- Advanced integrated sensor-based path planning and navigation system for autonomous intelligent robot Mars rover, Nour Abbas AlMousavi, 2026
- 5- Control of a cam-based infinitely variable transmission using fast and hyper-torque terminal sliding mode controllers tuned based on behavior tree, Muhaimen Faleh Hamad, 2026
- 6- Floating Wind Turbine Control Using Deep Reinforcement Learning Methods, Hadi Mohammadeian, 2024
- 7- Nanotechnology Application to Enhance the Emission Control by Using Activated Carbons Modified by Magnesium Oxide, Khalid Hossein Rahi, 2023
- 8- -INS/GPS with Deep Belief Networks based Bayesian Filtering Techniques and Implementation by Linux Systems, Parisa Doostdar, 2018
- 9- Design and implementation of a comprehensive navigation algorithm for INS/GPS with IMU alignment and auto-calibration, Hossein Nourmohammadi, 2017
- 10- Motion planning and control of nonholonomic spherical mobile robot using nonlinear model predictive control, Mahmoud Reza Azizi, 2017.

MSC

Samples of 40 Thesis:

Increasing safety in electric vehicles through an AI-based multiphysics approach to predict thermal failure in lithium-ion batteries, Pouya Karbasian, 2026

Design, simulation, control and construction of a floating wind turbine, 2025, Mohsen Shah-Hosseini

Adaptive gait planning of a bipedal robot to increase stability on uneven surfaces, Hadi Majdi, 2025

INS/GPS/GSM navigation by Orange-Pi Board, Naser Mohammadian Asl, 2017.

- Robust and Adaptive Control with Parameter Identification of MEMS Vibratory Rate Gyroscope, Mehran Hossini, 2016.

Autopilot Based on Markov Game Theory for Unmanned Aerial Vehicle's Stable Motion, Reza Taheri, 2017.

MEMS Accelerometer Control by Mamdani-Fuzzy Method. Sasan Madani, 2015.

Attitude and Orientation Determination by Nonlinear Filtering Application on MEMS INS, P. Doostdar, 2012.
 In Motion Alignment of INS/GPS by Robust and Optimal Techniques, S. Rafatnia, 2015.

Publications

Book Chapter

1. J. Keighobadi and Y. Mohamadi, "Fuzzy Robust Trajectory Tracking Control of WMRs," In: S. I. Ao, O. Castillo, and X. Huang, Eds., **Intelligent Control and Innovative Computing**, Springer, Singapore, 2012, pp. 77-90. doi:10.1007/978-1-4614-1695-1_7.

Patents

1. J. Keighobadi, and K. A. Fazeli, "Intelligent Compass System of Vehicle", **Iran Patent Serial Number** 70677 (18 July 2011).
2. J. Keighobadi, and K. A. Fazeli, "Intelligent Condition Monitoring System of Diesel Engine", **Iran Patent Serial Number** 70675 (18 July 2011).

Journal Papers

- 1- KhalafAnsar, H.M., Farhid, M. & Keighobadi, J. Physics-decomposed residual learning with PolyRF-boost for cold gas thrust prediction. Sci Rep (2026). <https://doi.org/10.1038/s41598-026-60675-8>
- 2- Reza Safvat, Jafar Keighobadi, Morteza H. Sadeghi, Hossein Nourmohammadi, Enhancing INS/GNSS Performance with Smart Learning Estimator, Under Review at Journal of Intelligent & Robotic Systems (2026), <https://doi.org/10.21203/rs.3.rs-10067481/v1>
- 3- Jafar Keighobadi, Farnaz Imani, Calibration and sensitivity enhancement of AI rate integrator through EKF and impact on Raman spectroscopy optimal wavelengths, Plos one (2026), <https://doi.org/10.1371/journal.pone.0351113>
- 4- Farnaz Imani, Jafar Keighobadi, Improving GPS-Denied Navigation Through Temperature Error Compensation in Atomic Gyroscopes and Accelerometers Using a Hybrid Adaptive Kalman Filtering–Machine Learning Approach, Array (2026), DOI: 10.1016/J.ARRAY.2026.100943
- 5- Farnaz Imani and Jafar Keighobadi, Robust State Estimation in Atomic Inertial Navigation Systems: A Comparative Study of CI-RKF and MKMC-EKF Filters, NAVIGATION: Journal of the Institute of Navigation (2026), DOI: <https://doi.org/10.33012/navi.768>
- 6- M Falih Hamad, J Keighobadi, M Homayoun Sadeghi, SA Al-Samarraie, Reinforcement learning-based control of an infinite variable transmission using super-twisting and fast terminal sliding mode controllers for floating wind turbines, Engineering Research Express 8 (2026), DOI 10.1088/2631-8695/ae3ba3
- 7- Saleh, Ali Mohammed; Saleh, Noah Mohammed; Abdulqader, Mahmod A.; Mahdi, Hadi Hamdi; Keighobadi, Jafar; Ahmed, Omar K.; Yassin, Khalil Farhan; Alias, Azil Bahari bin; Habeeb, Omar Abed; and Mohammed, Ibrahim Awad (2026), Waste-to-Energy Innovations and Advances in Hydrothermal Carbonization, Microwave, and Pyrolysis Processes: A Review, *AUIQ Complementary Biological System*: Vol. 3: Iss. 1, 84-99. DOI: <https://doi.org/10.70176/3007-973X.1059>
- 8- Hadi Mohammadian KhalafAnsar Jafar Keighobadi* and Morteza Farhid, Estimation of thrust force of cold gas propulsion using a multi-layer perceptron optimized by genetic algorithm *Eng. Res. Express* 7 045580 (2026), DOI 10.1088/2631-8695/ae1d1c
- 9- Hadi Mohammadian KhalafAnsar, Jaime Rohten, Jafar Keighobadi, A Hybrid Type-2 Fuzzy Double

- DQN with Adaptive Reward Shaping for Stable Reinforcement Learning, *AI* 2025, 6(12), 319; <https://doi.org/10.3390/ai6120319>
- 10- Hadi Mohammadian KhalafAnsar, Jafar Keighobadi, Mohsen Shahhosseini, Capsule-based federated reinforcement learning adaptive sliding mode for anomaly detection and control of floating wind turbines, *Plos one* 20 (2025), <https://doi.org/10.1371/journal.pone.0336410>.
 - 11- Javad Faraji, Jafar Keighobadi, Farrokh Janabi-Sharifi, Design and implementation of an adaptive unscented Kalman filter with interval Type-3 fuzzy set for an attitude and heading reference system considering gyroscope bias, *Mechanical Systems and Signal Processing*, Volume 223, 2025, 111870, ISSN 0888-3270, <https://doi.org/10.1016/j.ymssp.2024.111870>.
 - 12- Javad Faraji, Jafar Keighobadi, Farrokh Janabi-Sharifi, Design and implementation of an adaptive extended Kalman filter with interval type-3 fuzzy set for an attitude and heading reference system, *Signal Processing*, Volume 233, 2025, 109947, ISSN 0165-1684, <https://doi.org/10.1016/j.sigpro.2025.109947>.
 - 13- M Ommatmohammadi, Hadi Majdi, Jafar Keighobadi, Studying free vibration of tympanic membrane using analytical, finite element and Rayleigh-ritz approaches, *Journal of Theoretical and Applied Vibration and Acoustics* 11(2025), <http://dx.doi.org/10.22064/tava.2025.2049943.1260>.
 - 14- Reza Safvat, Jafar Keighobadi, Increasing performance of INS/GNSS using LSTM-recurrent fuzzy wavelet kalman filter. *GPS Solut* 29, 156 (2025). <https://doi.org/10.1007/s10291-025-01880-2>.
 - 15- Ashkan Valipour Zang Abad, Hadi Mohammadian, Jafar Keighobadi, Hexarotor Neuro Fuzzy Nonlinear Control, *Journal of Modeling in Engineering* (2025), 10.22075/jme.2024.32487.2571
 - 16- Saeed Rezapour Mohammad Ali Hamed Jafar Keighobadi, Mixed Longitudinal - Lateral Stability Control of Electric Vehicle Based on Online Tire - Road Friction Coefficients Estimation, *AUT Journal of Mechanical Engineering*, 9(1), pp. 33-52. doi: 10.22060/ajme.2024.23354.6123
 - 17- Mohammadian KhalafAnsar, H., Keighobadi, J., Etefagh, M. M., Tanha, J. Black-box nonlinear observer-based deep reinforcement learning controller with application on Floating Wind Turbines. *Scientia Iranica*, 2024; (): -. doi: 10.24200/sci.2024.63823.8614
 - 18- Shear Strengthening of Recycled Lightweight Coarse Aggregate Concrete Beams Using NSM Technique (H. M. Issa, A. M. Saleh, R. A. Hasan, M. M. Jomaa, N. M. Saleh, M. A. Abdulqader, A. B. Alias, J. Keighobadi, R. A. Salih, & I. I. Ghdhban , Trans.). (2024). *Mesopotamian Journal of Civil Engineering*, 2024, 115-126. <https://doi.org/10.58496/MJCE/2024/013>
 - 19- Analyzing and Comparing Global Sustainability Standards: LEED, BREEAM, and PBRS in Green Building arch article topic (N. M. Saleh, A. M. Saleh, , R. A. Hasan, J. Keighobadi, O. K. Ahmed, & Z. K. Hamad , Trans.). (2024). *Babylonian Journal of Internet of Things*, 2024, 70-78. <https://doi.org/10.58496/BJIoT/2024/009>
 - 20- Hamad , A. M. , Issa, H. M., Salih, R. A., Keighobadi, J., Alias , A. B., Hasan, R. A. , Saleh, N. M. , Ali Mohammed Saleh, A. M., Hamada, H. M., & Ghdhban, I. I. (2024). A Review on the Impact of Fly Ash on the Resistance of Ultra-High Performance Concrete to Acid and Sulfate Attacks. *ESTIDAMAA*, 2024, 7-14. <https://doi.org/10.70470/ESTIDAMAA/2024/002>
 - 21- Hadi Mohammadian KhalafAnsar, Jafar Keighobadi, Deep Reinforcement Learning with Immersion- and Invariance-based State Observer Control of Wave Energy Converters, *International Journal of Engineering* (2024), <https://doi.org/10.5829/ije.2024.37.06c.05>
 - 22- H. M. KhalafAnsar and J. Keighobadi, "Adaptive Inverse Deep Reinforcement Lyapunov learning control for a floating wind turbine," *Scientia Iranica*, (2026): -, doi:10.24200/sci.2023.61871. 7532
 - 23- Jafar Keighobadi, Hadi Mohammadian KhalafAnsar, Peiman Naseradinmousavi, Adaptive neural dynamic surface control for uniform energy exploitation of floating wind turbine, *Applied*

- Energy, Volume 316, 2022, <https://doi.org/10.1016/j.apenergy.2022.119132>.
- 24- Oveisi, A., Gogilan, U., Keighobadi, J., & Nestorović, T. (2024). State Observer-Based Conditioned Reverse-Path Method for Nonlinear System Identification. *Actuators*, 13(4), 142. <https://doi.org/10.3390/act13040142>
 - 25- Moghanni-Bavil-Olyaei M-R, Keighobadi J, Ghanbari A, Olegovna Zekiy A. Passivity-based hierarchical sliding mode control/observer of underactuated mechanical systems. *Journal of Vibration and Control*. May 2022. doi:10.1177/10775463221091035
 - 26- J. Keighobadi, M. Hosseini-Pishrobat, Pirastezad, M J Yazdanpanah, "Immersion and invariance-based extended state observer design for a class of nonlinear systems" *Int J Robust Nonlinear Control*, Volume 31, Issue13, 2021.
 - 27- J Keighobadi, J Faraji, F Janabi-Sharifi, MA Hamed, "Design and experimental evaluation of block-pulse functions and Legendre polynomials observer for attitude-heading reference system" *ISA Transactions*, 2021.
 - 28- J. Keighobadi, M. Hosseini-Pishrobat, J. Faraji and M. N. Langehbiz, "Design and Experimental Evaluation of Immersion and Invariance Observer for Low-Cost Attitude-Heading Reference System," in *IEEE Transactions on Industrial Electronics*, vol. 67, no. 9, pp. 7871-7878, Sept. 2020, doi: 10.1109/TIE.2019.2944062.
 - 29- Doostdar, P., Keighobadi, J. & Hamed, M.A. INS/GNSS integration using recurrent fuzzy wavelet neural networks. *GPS Solut* 24, 29 (2020). <https://doi.org/10.1007/s10291-019-0942-z>
 - 30- J Keighobadi, M Hosseini-Pishrobat, J Faraji "Adaptive neural dynamic surface control of mechanical systems using integral terminal sliding mode", *Neurocomputing*, 379 (2021), Pages 141-151,2020.
 - 31- J. Keighobadi, M. Hosseini-Pishrobat, J Faraji, Atta Oveisi, Tamara Nestorović "Robust nonlinear control of atomic force microscope via immersion and invariance" *Int J Robust Nonlinear Control* (2019), <https://doi.org/10.1002/rnc.4421>
 - 32- Jafar Keighobadi, Hojjat Fouladi, Davood Hashempour, Amirreza Rafat Talebi, Dynamical Investigation of Cam-Follower Profile Under Space-100 to+ 120° C Temperature Condition, *International Journal of Mechanical Engineering and Applications* (2021)
 - 33- Moghanni-Bavil-Olyaei, MR., Ghanbari, A. & Keighobadi, J. Trajectory Tracking Control of a Class of Underactuated Mechanical Systems with Nontriangular Normal Form Based on Block Backstepping Approach. *J Intell Robot Syst* 96, 209–221 (2019). <https://doi.org/10.1007/s10846-019-00984-5>
 - 34- Mehran Hosseini-Pishrobat, Jafar Keighobadi, Armin Pirastehzad, Mohammad Javad Yazdanpanah, Immersion and invariance-based extended state observer design for a class of nonlinear systems, *International Journal of Robust and Nonlinear Control* 31 (2021)
 - 35- M. Javan Salehi, M. ZARGHAMI, and J. KEIGHOBADI, "Utilization of Model Predictive Control to Improve Optimization-Simulation Models for Managing Water Transfer Systems: Case Study of Zarinerood Water Transfer Line to Tabriz," *IRAN-WATER RESOURCES RESEARCH*, vol. 15, no. 4, pp. 18–24, 2020, [Online]. Available: <https://sid.ir/paper/369990/en>
 - 36- Hosseini-Pishrobat M, Keighobadi J. Extended state observer-based robust non-linear integral dynamic surface control for triaxial MEMS gyroscope. *Robotica*. 2019;37(3):481-501. doi:10.1017/S0263574718001133
 - 37- Rafatnia, S., Nourmohammadi, H. & Keighobadi, J., Fuzzy-adaptive constrained data fusion algorithm for indirect centralized integrated SINS/GNSS navigation system. *GPS Solut* 23, 62 (2019). <https://doi.org/10.1007/s10291-019-0845-z>
 - 38-
 - 39- S.Rafatnia, H.Nourmohammadi, J.Keighobadi, M.A.Badamchizadeh, "In-move aligned SINS/GNSS system using recurrent wavelet neural network (RWNN)-based integration scheme" *Mechatronics*,

Volume 54, October 2018, Pages 155-165.

- 40- M. Hosseini-Pishrobat, J. Keighobadi, Atta Oveisi, Tamara Nestorović, "Robust Linear Output Regulation Using Extended State Observer" Mathematical Problems in Engineering, Jul 2018.
- 41- Hosseini-Pishrobat, M., Keighobadi, J. Robust Vibration Control and Angular Velocity Estimation of a Single-Axis MEMS Gyroscope Using Perturbation Compensation. J Intell Robot Syst 94, 61–79 (2019). <https://doi.org/10.1007/s10846-018-0789-5>
- 42-
- 43- H. Nourmohammadi, J. Keighobadi, Design and experimental evaluation of indirect centralized and direct decentralized integration scheme for low-cost INS/GNSS system, GPS Solut (2018) 22: 65. <https://doi.org/10.1007/s10291-018-0732-z>
- 44- Nourmohammadi H, Keighobadi J. (2018). 'Integration Scheme for SINS/GPS System Based on Vertical Channel Decomposition and In-Motion Alignment', *AUT Journal of Modeling and Simulation*, 50(1), pp. 13-22. doi: 10.22060/miscj.2017.12483.5036
- 45-
- 46- A. Oveisi, M. Hosseini-Pishrobat, T. Nestorović, J. Keighobadi, "Observer-Based Repetitive Model Predictive Control in Active Vibration Suppression", *Structuul Control and Health Monitoring*, Vol. 25, May 2018.
- 47- H. Nourmohammadi, J. Keighobadi, Fuzzy adaptive integration scheme for low-cost SINS/GPS navigation system, MSSP, Vol. 99, pp. 434-449, 2018.
- 48- J. Keighobadi, H. Vosoughi, & J. Faraji, "Design and implementation of a model predictive observer for AHRS", GPS Solut (2018) 22: 29. <https://doi.org/10.1007/s10291-017-0696-4>
- 49- M. Hosseini-Pishrobat, J. Keighobadi, "Robust output regulation of a triaxial MEMS gyroscope via nonlinear active disturbance rejection" *Int J Robust Nonlinear Control*. 2017;1–22. <https://doi.org/10.1002/rnc.3983>
- 50- MR Azizi, J Keighobadi. "Point stabilization of nonholonomic spherical mobile robot using nonlinear model predictive control. *Robotics and Autonomous Systems*" 98, 347-359, 2017. <https://doi.org/10.1016/j.robot.2017.09.015>
- 51- H. Nourmohammadi, J. Keighobadi, Decentralized INS/GPS system with MEMS-grade inertial sensors using QR-factorized CKF, *IEEE Sens. J.*, 17 (11) (2017), pp. 3278-3287, 10.1109/JSEN.2017.2693246
- 52- J. Keighobadi; A. H. Najafi, Full-state-feedback, fuzzy type I and fuzzy type II control of MEMS accelerometer, *J Mech Sci Technol* (2018) 32: 793. <https://doi.org/10.1007/s12206-018-0127-z>.
- 53- J. Keighobadi · J. Fraji · S. Rafatnia, "Chaos Control of Atomic Force Microscope System Using Nonlinear Model Predictive Control", *JOURNAL OF MECHANICS*, 2016 , DOI: 10.1017/jmech.2016.89
- 54- M. Hosseini, J. Keighobadi, "Force-balancing model predictive control of MEMS vibratory gyroscope sensor" *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, 2015 (in press), DOI: 10.1177/0954406215607899
- 55- H. Nourmohammadi, J. Keighobadi and Mohsen Bahrami, "Design, dynamic modelling and control of a bio-inspired helical swimming microrobot with three-dimensional manoeuvring" *Article in Transactions of the Institute of Measurement and Control* 1(1):1-10 · February 2016,· DOI: 10.1177/0142331215627006
- 56- Keighobadi, J., Yarmohammadi, M.J. New chatter-free sliding mode synchronization of steer-by-wire systems under chaotic conditions. *J Mech Sci Technol* 30, 3829–3834 (2016). <https://doi.org/10.1007/s12206-016-0746-9>
- 57- HAMID VOSOUGHI, JAFAR KEIGHOBADI, and JAVAD FARAJI, "DESIGN AND IMPLEMENTATION OF AHRS BY USING KAUTZ FUNCTION AND PREDICTIVE ESTIMATOR WITH EULER'S DYNAMIC,"

- MODARES MECHANICAL ENGINEERING, vol. 17, no. 6 , pp. 221–232, 2017, [Online]. Available: <https://sid.ir/paper/179234/en>
- 58- Mohammad Shahidi, Jafar Keighobadi, Ahmad Reza Khoogar, 3-RPS Parallel Manipulator Dynamical Modelling and Control Based on SMC and FL Methods, AUT Journal of Modeling and Simulation (2017)
 - 59- J. Keighobadi and M.R. Azizi, "Robust Sliding Mode Controller for Trajectory Tracking and Attitude Control of a Nonholonomic Spherical Mobile Robot", AIJ-MISC, 2015.
 - 60- H. Millanchian, J. Keighobadi and H. Nourmohammadi, "Magnetic Calibration of Three-Axis Strapdown Magnetometers for Applications in Mems Attitude-Heading Reference Systems" AIJ-MISC, 2015.
 - 61- Musavi, N.; Keighobadi, J. Adaptive fuzzy neuro-observer applied to low cost INS/GPS. Appl. Soft Comput. 2015, 29, 82–94, <https://doi.org/10.1016/j.asoc.2014.12.024>.
 - 62- Sardarmehni, T., Keighobadi, J., Menhaj, M.B. et al. Robust predictive control of lambda in internal combustion engines using neural networks. Archiv.Civ.Mech.Eng 13, 432–443 (2013), <https://doi.org/10.1016/j.acme.2013.05.003>
 - 63- Invited Paper, J. Keighobadi and P. Doostdar, "Fuzzy Sliding Mode Observer for Vehicular Attitude Heading Reference System", Positioning, 2013, Vol 4, pp 215-226.
 - 64- P. Doostdar and J. Keighobadi, "Design and implementation of SMO for a nonlinear MIMO AHRS," Mechanical Systems and Signal Processing, Vol. 32, No. 1, 2012, pp. 94-115. doi:10.1016/j.ymssp.2012.02.007
 - 65- J. Keighobadi and M. B. Menhaj, "From Nonlinear to Fuzzy Approaches in Trajectory Tracking Control of Wheeled Mobile Robots," Asian Journal of Control, Vol. 14, No. 4, 2012, pp. 960-973. doi:10.1002/asjc.480.
 - 66- J. Keighobadi, M. J. Yazdanpanah and M. Kabganian, "An Enhanced Fuzzy H_∞ Estimator Applied to Low-Cost Attitude-Heading Reference System" Kybernetes, Vol. 40, No. 1, 2011, pp 300-326. doi:10.1108/03684921111118068.
 - 67- J. Keighobadi, "Fuzzy Calibration of a Magnetic Compass for Vehicular Applications," Mechanical Systems and Signal Processing, Vol. 25, No. 6, 2011, pp. 1973-1987. doi:10.1016/j.ymssp.2010.11.005
 - 68- J. Keighobadi, M. B. Menhaj and M. Kabganian, "Feedback-linearization and fuzzy controllers for trajectory tracking of wheeled mobile robots," Kybernetes, Vol. 39, No. 1, 2010, pp. 83-106. doi:10.1108/03684921011021291.
 - 69- J. Keighobadi, M. Shahidi, A. N. Khajeh and K. A. Fazeli, "Dynamic Based SMC of Nonholonomic Mobile Robots," Positioning, Vol. 4 No. 2, 2013, pp. 153-159. doi: 10.4236/pos.2013.42015.
 - 70- J. Keighobadi, K. Fazeli and M. Shahidi, "Self-Constructing Neural Network Modeling and Control of an AGV," Positioning, Vol. 4 No. 2, 2013, pp. 160-168. doi: 10.4236/pos.2013.42016.
 - 71- R. Bohlouli, B. Rostami, and J. Keighobadi, " Application of neuro-wavelet algorithm in ultrasonic-phased array nondestructive testing of polyethylene pipelines," Journal of Control Science and Engineering, Vol. 2012, pp 1-9, Article ID 389690, 9 pages, doi:10.1155/2012/389690.
 - 72- J. Keighobadi, M. J. Yazdanpanah and M. Kabganian, "Fuzzy variable-length Sliding Window Blockwise Least Square Algorithm with Application to Vehicle Heading Determination" ISME Scientific and Research Journal, Vol. 8 No. 2, 2008, pp 59-78 (In Farsi/Persian).
 - 73- M. R. Moghanni, A. Ghanbary and J. Keighobadi, "Observer-based Adaptive Fuzzy Sliding Mode Control for MEMS Angular Rate Sensor" Majlesi Journal of Mechatronic Systems, Vol. 1 No. 4, 2012, pp 30-37.
 - 74- A. Keyvani, A. Ghanbary and J. Keighobadi, "Investigation of Squeeze Film Effect on Dynamic Characteristics of Electrically Actuated Fully Clamped Micro-Beam", Sensors and Transducers, Vol.

123, No 12, 2010, pp 41-51.

- 75- M. R. Moghanni, A. Ghanbary and J. Keighobadi, "Intelligent robust nonlinear controller for MEMS angular rate sensor", *Sensors and Transducers*, Vol. 141, No. 6, 2010, pp 92-105.

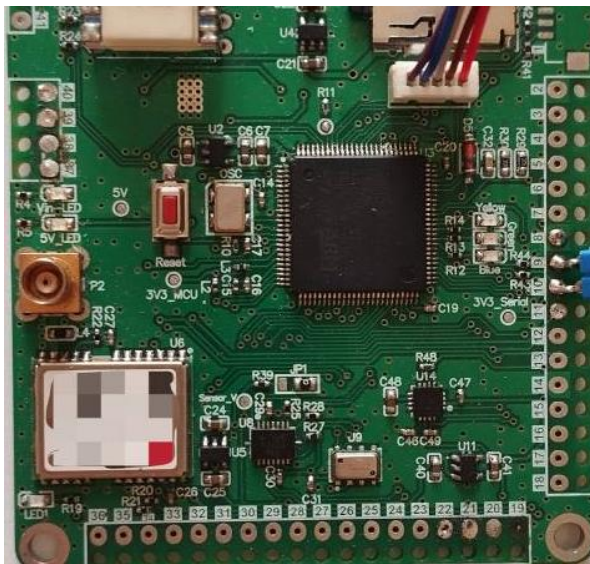
Selected Conference Papers

- 1- Seyyed Amirreza Abdollahi, Jafar Keighobadi, Seyyed Faramarz Ranjbar, Utilizing fuzzy logic to optimize the extraction of maximum output power from the turbine, 10th International Conference on Technology and Energy Management (ICTEM), IEEE (2025) DOI 10.1109/ICTEM66196.2025.11063538
- 2- Hadi Mohammadian KhalafAnsar, Jafar Keighobadi, Mir Mohammad Ettefagh, Deep reinforcement genetic learning -based model reference adaptive inverse control applied on the floating wind turbine, International Conference on Artificial Intelligence in the Age of ..., 2025
- 3- Jafar Keighobadi , Hossein Nourmohammadi and Sadra Rafatnia, Design and Implementation of GA Filter Algorithm for Baro-inertial Altitude Error Compensation, 18th IIE International Conference on Latest Trends in Engineering and Technology (ICLTET-18) March 21-23, 2018 Istanbul (Turkey)
- 4- M.R. Azizi, and , J. Keighobadi "Robust Sliding Mode Trajectory Tracking Controller for a Nonholonomic Spherical Mobile Robot", in Proceedings of the 19th IFAC World Congress, Cape Town, South Africa, 24-29 August, 2014.
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- 6- M. H. Pishrobatand and J. Keighobadi "Model Predictive Control of MEMS Vibratory Gyroscope", in Proceedings of the 19th IFAC World Congress, Cape Town, South Africa, 24-29 August, 2014.
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- 12- J. Keighobadi, M. Kabganian, and M.J. Yazdanpanah, "Design and Real Time implementation of a Fuzzy Tuned H_∞ Estimator in a Low Cost AHRS", in Proceedings of 17th IFAC World Congress, Seoul, Korea, 6-11 July, 2008, pp 11554-11559.
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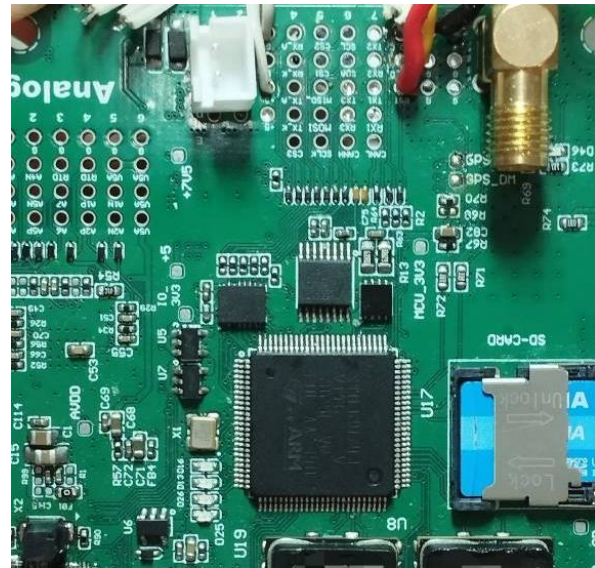
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Examples of Practical Projects



Stm32h743vit6



Stm32f407VGT6



Beagle-Bone Board



TMS320F28334 Micro-controller

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