Prof. Mohammad Teshnehlab

Faculty of Electrical Engineering

K. N. Toosi University of Technology

No. 323, Seyed Khandan Bridge

Tehran, Iran

Postal Code: 163171419

Phone: +(98) 021-84062323

Email: teshnehlab@eetd.kntu.ac.ir

Home: https://wp.kntu.ac.ir/teshnehlab

Education

1992–1995   Ph.D., Saga University, Saga, Japan

Thesis Title: Neural Network-Based Controls Using Flexible Neuron Models

1991–1992   M.Sc., Electrical Engineering, Oita University, Oita, Japan

1977–1981   B.Sc., Electrical Engineering, Stony Brook University, NY, USA

Research Interest

¶ **Artificial Intelligence**

– Artificial Neural Networks

– Fuzzy Systems

– Deep Learning

– Reinforcement Learning

– Federated Learning

– Federated Deep Learning

· **Intelligent Control**

¸ **Optimization**

¹ **Interval Soft Computing**

Books

[1] **Mohammad Teshnehlab**, & Sina Ranjbar Kooh Farhadi, Deep Learning Theoretical and Practical Approach, 2022, by K. N. Toosi University of Technology Publisher (in Persian), ISBN:978-622-5234-03-1

[2] **Mohammad Teshnehlab** & Pourya Jafari, Neural Networks and Advanced Neuro-Controllers, 2015, by K. N. Toosi University of Technology Publisher (in Persian), ISBN: 978-600-786705-1

[3] **Mohammad Teshnehlab**, Nima Saffar Pour, & Dariush Afiuni, Fuzzy Systems and Controllers, 2010, by K. N. Toosi University of Technology Publisher (in Persian), ISBN: 978964-8703-16-0

[4] **Mohammad Teshnehlab** and, Keigo Watanabe, Intelligent Control Based on Flexible Neural Networks, 1999, Springer

Research Publications

Published Journal Articles

[1] Mehrabinezhad, A., **Teshnehlab**, M. and Sharifi, A., 2024. A comparative study to examine principal component analysis and kernel principal component analysis-based weighting layer for convolutional neural networks. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, *12*(1), p.2379526.1

[2] Farhadi, A., Mirzarezaee, M., Sharifi, A. and **Teshnehlab**, M., 2024. Domain adaptation in reinforcement learning: a comprehensive and systematic study. *Frontiers of Information Technology & Electronic Engineering*, *25*(11), pp.1446-1465.

[3] Khanjani, K., Hosseini, S.R., Taheri, H., Shashaani, S. and **Teshnehlab**, M., 2024. COVID-19 Detection Based on Blood Test Parameters using Various Artificial Intelligence Methods. *arXiv preprint arXiv:2404.02348*.

[4] Hosseini, S.R., Taheri, H. and **Teshnehlab**, M., 2024. Enet-21: an optimized light cnn structure for lane detection. *arXiv preprint arXiv:2403.19782*.

[5] Jebraeily, Y., Sharafi, Y. and **Teshnehlab**, M., 2024. Driver Drowsiness Detection Based on Convolutional Neural Network Architecture Optimization Using Genetic Algorithm. *IEEE Access*.

[6] Kamzan, M., Ghanifar, M., Nikkhah, A., Roshanian, J. and **Teshnehlab**, M., 2024. Development of an intelligent closed-loop angular trajectory generation algorithm for a satellite system. *Space Science, Technology and Applications*, *3*(2), pp.101-114.

[7] Khaniki, M.A.L., Tavakoli-Kakhki, M. and **Teshnehlab**, M., 2024. Variable-Order interval Type-II Fuzzy Fractional PID Controller for Load Frequency Control Optimized via Hybrid Optimization.

[8] Mehrabinezhad, A., **Teshnehlab**, M. and Sharifi, A., 2024. Evaluating the Impact of Kernel Pca on Machine Learning Performance Insights from Mnist Digit Classification. *Electrical Electronics Engineering: Open Access*, *1*(1), pp.1-2.

[9] Hosseiniyan Khatibi, S.M., Zununi Vahed, S., Homaei Rad, H., Emdadi, M., Akbarpour, Z., **Teshnehlab**, M., Pirmoradi, S. and Alizadeh, E., 2023. Uncovering key molecular mechanisms in the early and late-stage of papillary thyroid carcinoma using association rule mining algorithm. *Plos one*, *18*(11), p.e0293335.

[10] Hosseiniyan Khatibi, S.M., Rahbar Saadat, Y., Hejazian, S.M., Sharifi, S., Ardalan, M., **Teshnehlab**, M., Zununi Vahed, S. and Pirmoradi, S., 2023. Decoding the Possible Molecular Mechanisms in Pediatric Wilms Tumor and Rhabdoid Tumor of the Kidney through Machine Learning Approaches. *Fetal and Pediatric Pathology*, *42*(6), pp.825-844.

[11] Mehrabinezhad, A., **Teshnelab**, M. and Sharifi, A., 2023. Autoencoder-PCA-based Online Supervised Feature Extraction-Selection Approach. *Journal of AI and Data Mining*, *11*(4), pp.525-534.

[12] Abbasi, H., Yaghoobi, M., Sharifi, A. and **Teshnehlab**, M., 2023. NCFS: new chaotic fuzzy system as a general function approximator. *Journal of Control and Decision*, *10*(4), pp.514-528.

[13] Moradkhani, N. and **Teshnehlab**, M., 2023. (2205-7386) Identification of cement rotary kiln using type 2 Takagi-Sugeno neuro-fuzzy system considering the effect of different noisy condition. *Iranian Journal of Fuzzy Systems*, *20*(5), pp.33-45.

[14] Torabi, A., Sharifi, A. and **Teshnehlab**, M., 2023. Using cartesian genetic programming approach with new crossover technique to design convolutional neural networks. *Neural Processing Letters*, *55*(5), pp.5451-5471.

[15] Torabi, A., Sharifi, A. and **Teshnehlab**, M., 2023. Using cartesian genetic programming approach with new crossover technique to design convolutional neural networks. Neural Processing Letters, 55(5), pp.5451-5471.

[16] Golshan, M., **Teshnehlab**, M. and Sharifi, A., 2023. Brain-inspired emotional learning algorithm enhanced with type-one and interval type-two fuzzy extreme learning machine in noisy data.

[17] Kamali, S.R., Banirostam, T., Motameni, H. and **Teshnehlab**, M., 2023. An immune-based multi-agent system for flexible job shop scheduling problem in dynamic and multi-objective environments. *Engineering Applications of Artificial Intelligence*, *123*, p.106317.

[18] **Teshnehlab**, M., 2022. A Self-adaptive Binary Cat Swarm Optimization Using New Time-Varying Transfer Function for Gene Selection in DNA Microarray Expression Cancer Data.

[19] Modhej, N., **Teshnehlab**, M., Bastanfard, A. and Raiesdana, S., 2023. Arabic Handwritten Recognition Using Hybrid CNN, HMM and an Intelligent Network Based on Dentate Gyrus of the Brain. *International Journal of Information & Communication Technology Research (2251-6107)*, *15*(2).

[20] Farhadi, A., Mirzarezaee, M., Sharifi, A. and **Teshnehlab**, M., 2023. Unsupervised Domain Adaptation for image classification based on Deep Neural Networks. *Intelligent Multimedia Processing and Communication Systems (IMPCS)*, *4*(1), pp.27-37.

[21] Shashaani, S., **Teshnehlab**, M., Khodadadian, A., Parvizi, M., Wick, T. and Noii, N., 2023. Using layer-wise training for road semantic segmentation in autonomous cars. *IEEE Access*, *11*, pp.46320-46329.

[22] Hosseiniyan Khatibi, S.M., Najjarian, F., Homaei Rad, H., Ardalan, M., **Teshnehlab**, M., Zununi Vahed, S. and Pirmoradi, S., 2023. Key therapeutic targets implicated at the early stage of hepatocellular carcinoma identified through machine-learning approaches. *Scientific reports*, *13*(1), p.3840.

[23] Kamali, S.R., Banirostam, T., Motameni, H. and **Teshnehlab**, M., 2023. An immune inspired multi-agent system for dynamic multi-objective optimization. *Knowledge-Based Systems*, *262*, p.110242.

[24] Shokoohi, M. and *Teshnehlab*, M., 2023, January. Multi-Objective Optimization for Neural Network Structure. In *2023 28th International Computer Conference, Computer Society of Iran (CSICC)* (pp. 1-5). IEEE.

[25] Ghaemzadeh Ebli, H., Nekoui, M. and **Teshnelab**, M., 2023. Designing Multirate Control for a Robotic Manipulator in the Presence of Disturbance. *International Journal of Smart Electrical Engineering*, *1*(1), p.1.

[26] Aghayousefi, R., Hosseiniyan Khatibi, S.M., Zununi Vahed, S., Bastami, M., Pirmoradi, S. and **Teshnehlab**, M., 2023. A diagnostic miRNA panel to detect recurrence of ovarian cancer through artificial intelligence approaches. *Journal of Cancer Research and Clinical Oncology*, *149*(1), pp.325-341.

[27] Abbasi, H., Yaghoobi, M., Sharifi, A. and **Teshnehlab**, M., 2023. General function approximation of a class of cascade chaotic fuzzy systems. *Journal of Intelligent & Fuzzy Systems*, *44*(1), pp.19-40.

[28] Hosseiniyan Khatibi, S.M., Ardalan, M., **Teshnehlab**, M., Vahed, S.Z. and Pirmoradi, S., 2022. Panels of mRNAs and miRNAs for decoding molecular mechanisms of Renal Cell Carcinoma (RCC) subtypes utilizing Artificial Intelligence approaches. *Scientific Reports*, *12*(1), p.16393.

[29] Golshan, M., **Teshnehlab**, M. and Sharifi, A., 2022. A Modified Brain Emotional Learning Model Inspired By Online Recurrent Memory Sequential Extreme Learning Machine Based On Neural Networks. *Journal of Modeling in Engineering*, *20*(70), pp.1-21.

[30] Modhej, N., Bastanfard, A., **Teshnehlab**, M. and Raiesdana, S., 2022. Computational Pattern Separation Models of Dentate Gyrus Neural Subpopulation in the Hippocampus. *Caspian Journal of Neurological Sciences*, *8*(4), pp.244-251.1

[31] Jalaeian Zaferani, E., **Teshnehlab**, M., Khodadadian, A., Heitzinger, C., Vali, M., Noii, N. and Wick, T., 2022. Hyper-parameter optimization of stacked asymmetric auto-encoders for automatic personality traits perception. *Sensors*, *22*(16), p.6206.

[32] Mohtashami, H., Movaghar, A. and **Teshnehlab**, M., 2022. Lifetime Improvement Based on Event Occurrence Patterns for Wireless Sensor Networks Using Multi-Objective Optimization. *Wireless Personal Communications*, *125*(4), pp.3333-3349.

[33] Sadeghi, D., Shoeibi, A., Ghassemi, N., Moridian, P., Khadem, A., Alizadehsani, R., **Teshnehlab**, M., Gorriz, J.M., Khozeimeh, F., Zhang, Y.D. and Nahavandi, S., 2022. An overview of artificial intelligence techniques for diagnosis of Schizophrenia based on magnetic resonance imaging

modalities: Methods, challenges, and future works. *Computers in Biology and Medicine*, *146*, p.105554.

[34] Khodadadian, A., Parvizi, M., **Teshnehlab**, M. and Heitzinger, C., 2022. Rational design of field-effect sensors using partial differential equations, Bayesian inversion, and artificial neural networks. *Sensors*, *22*(13), p.4785.

[35] Abbasi, H., Yaghoobi, M., **Teshnehlab**, M. and Sharifi, A., 2022. Cascade chaotic neural network (CCNN): a new model. *Neural Computing and Applications*, *34*(11), pp.8897-8917.

[36] Jalaeian Zaferani, E., **Teshnehlab**, M. and Vali, M., 2022. Automatic personality recognition and perception using deep learning and supervised evaluation method. *Journal of applied research on industrial engineering*, *9*(2), pp.197-211.

[37] Sadr, H. and **Teshnehlab**, M., 2022. Efficient Method Based on Combination of Deep Learning Models for Sentiment Analysis of Text. *Signal and Data Processing*, *19*(1), pp.19-38.

[38] Sheydaeian Arani, A.A., Aliyari Shoorehdeli, M., Moarefianpour, A. and **Teshnehlab**, M., 2022. State and fault estimation for T–S fuzzy nonlinear systems using an ensemble UKF. *Circuits, Systems, and Signal Processing*, pp.1-29.

[39] Fateri, S., **Teshnehlab**, M. and Shoorehdeli, M.A., 2022. A Hybrid Model of a Flexible Rough Neural Network and Genetic Algorithm (FRNN-GA) in Numerical Weather Forecasting Using Emotional Learning Strategy. *Authorea Preprints*.

[40] Azimnezhad, M., Manthouri, M. and **Teshnehlab**, M., 2022. Fuzzy Sliding Mode Controller for SEIR Model of Epidemic Disease. *Azerbaijan Journal of High Performance Computing*, *5*(1), pp.143-164.

[41] Saffari, M., Khodayar, M. and **Teshnehlab**, M., 2022. Random weights rough neural network for glaucoma diagnosis. In *Advances in Natural Computation, Fuzzy Systems and Knowledge Discovery: Proceedings of the ICNC-FSKD 2021 17* (pp. 534-545). Springer International Publishing.

[42] Jafarpisheh, N., Zaferani, E.J., **Teshnehlab**, M., Karimipour, H., Parizi, R.M. and Srivastava, G., 2021. A deep neural network combined with radial basis function for abnormality classification. *Mobile Networks and Applications*, pp.1-11.

[43] Sharafi, Y. and **Teshnehlab**, M., 2021. Opposition-based binary competitive optimization algorithm using time-varying V-shape transfer function for feature selection. *Neural Computing and Applications*, *33*, pp.17497-17533.

[44] Sharafi, Y., **Teshnelab**, M. and Ahmadieh Khanesar, M., 2021. A Multi-objective Approach based on Competitive Optimization Algorithm and its Engineering Applications. *Journal of AI and Data Mining*, *9*(4), pp.497-514.

[45] Abbasi, H., Yaghoobi, M., Sharifi, A., & **Teshnehlab, M.** (2022). NCFS: new chaotic fuzzy system as a general function approximator. Journal of Control and Decision, 1-15. *doi: https://doi.org/10.1080/23307706.2022.2110166*

[46]   Jalaeian Zaferani, E., **Teshnehlab, M.**, Khodadadian, A., Heitzinger, C., Vali, M., Noii, N., & Wick, T. (2022). Hyper-Parameter optimization of stacked asymmetric auto-encoders for automatic personality traits perception. Sensors, 22(16), 6206. *doi: https://doi.org/10.3390/s22166206*

[47]   Khodadadian, A., Parvizi, M., **Teshnehlab, M.**, & Heitzinger, C. (2022). Rational Design of Field-Effect sensors using partial differential equations, Bayesian inversion, and artificial neural networks. Sensors, 22(13), 4785. *doi: 10.3390/s22134785*

[48]   Jalaeian Zaferani, E., **Teshnehlab, M.**, & Vali, M. (2022). Automatic personality recognition and perception using deep learning and supervised evaluation method. Journal of Applied Research on Industrial Engineering, 9(2), 197-211. *doi: 10.22105/JARIE.2021.282961.1314*

[49]   Golshan, M., **Teshnehlab, M.**, & Sharifi, A. (2022). A modified brain emotional learning model inspired by online recurrent memory sequential extreme learning machine based on neural networks. Journal of Modeling in Engineering. *doi: 10.22075/JME.2022.25125.2184*

[50]   Mohtashami, H., Movaghar, A., & **Teshnehlab, M.** (2022). Lifetime improvement based on event occurrence patterns for wireless sensor networks using multi-objective optimization. Wireless Personal Communications, 1-17. *doi: 10.1007/s11277-022-09712-z*

[51]   Sadr, H., & **Teshnehlab, M.** (2022). Efficient method based on combination of deep learning models for sentiment analysis of text. Signal and Data Processing, 19(1), 0-0. *URL: http://jsdp.rcisp.ac.ir/article-1-1060-en.html*

[52]   Sadeghi, D., Shoeibi, A., Ghassemi, N., Moridian, P., Khadem, A., Alizadehsani, R., **Teshnehlab, M.** & Acharya, U. R. (2022). An overview of artificial intelligence techniques for diagnosis of Schizophrenia based on magnetic resonance imaging modalities: Methods, challenges, and future works. Computers in Biology and Medicine, 105554. *doi: 10.1016/j.compbiomed.2022.105554*

[53]   Sheydaeian Arani, A. A., Aliyari Shoorehdeli, M., Moarefianpour, A., & **Teshnehlab, M.** (2022). State and fault estimation for T–S fuzzy nonlinear systems using an ensemble UKF. Circuits, Systems, and Signal Processing, 41(5), 2566-2594. *doi:10.1007/s00034-021-01897-1*

[54]   Fateri, S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2022). A hybrid model of a flexible rough neural network and genetic algorithm (FRNN-GA) in numerical weather forecasting using emotional learning strategy. *doi: 10.22541/au.165123532.22199704/v1*

[55]   **Teshnehlab, M.** (2022). A Self-adaptive Binary Cat Swarm Optimization using new timevarying transfer function for gene selection in DNA microarray expression cancer data. *doi: 10.21203/rs.3.rs-1010398/v1*

[56]   Siar, M., & **Teshnehlab, M.** (2022). A combination of feature extraction methods and deep learning for brain tumour classification. IET Image Processing, 16(2), 416-441. *doi: 10.1049/ipr2.12358*

[57] Jafarpisheh, N., Zaferani, E. J., **Teshnehlab, M.,** Karimipour, H., Parizi, R. M., & Srivastava, G. (2021). A deep neural network combined with radial basis function for abnormality classification. Mobile Networks and Applications, 26(6), 2318-2328. *doi: 10.1007/s11036-02101835-0*

[58] Sharafi, Y., & **Teshnehlab, M.** (2021). Opposition-based binary competitive optimization algorithm using time-varying V-shape transfer function for feature selection. Neural Computing and Applications, 33(24), 17497-17533. *doi: 10.1007/s00521-021-06340-9*

[59] Mehralian, S., **Teshnehlab, M.,** & Nasersharif, B. (2021). Unrestricted deep metric learning using neural networks interaction. Pattern Analysis and Applications, 24(4), 1699-1711. *doi: 10.1007/s10044-021-01018-3*

[60] Moradi Vartouni, A., Shokri, M., & **Teshnehlab, M.** (2021). Auto-threshold deep SVDD for anomaly-based web application firewall. *TechRxiv: 10.36227/techrxiv.15135468*

[61] Sheydaeian Arani, A. A., Aliyari Shoorehdeli, M., Moarefianpour, A., & **Teshnehlab, M.** (2021). Fault estimation based on ensemble unscented Kalman filter for a class of nonlinear systems with multiplicative fault. International Journal of Systems Science, 52(10), 2082-2099. *doi: 10.1080/00207721.2021.1876959*

[62] Pirmoradi, S., **Teshnehlab, M.,** Zarghami, N., & Sharifi, A. (2021). A self-organizing deep neuro-fuzzy system approach for classification of kidney cancer subtypes using mirna genomics data. Computer Methods and Programs in Biomedicine, 206, 106132. *doi: 10.1016/j.cmpb.2021.106132*

[63] Zaferani, E. J., **Teshnehlab, M.,** & Vali, M. (2021). Automatic Personality Traits Perception Using Asymmetric Auto-Encoder. IEEE Access, 9, 68595-68608. *doi: 10.1109/ACCESS.2021.3076820*

[64] Sadr, H., Pedram, M. M., & **Teshnehlab, M.** (2021). Convolutional neural network equipped with attention mechanism and transfer learning for enhancing performance of sentiment analysis. Journal of AI and Data Mining, 9(2), 141-151. *doi: 10.22044/JADM.2021.9618.2100*

[65] Sadr, H., Solimandarabi, M. N., Pedram, M. M., & **Teshnehlab, M.** (2021). A novel deep learning method for textual sentiment analysis. arXiv preprint arXiv:2102.11651. *doi: 10.48550/arXiv.2102.11651*

[66] Pirmoradi, S., **Teshnehlab, M.,** Zarghami, N., & Sharifi, A. (2020). A self-organizing deep auto-encoder approach for classification of complex diseases using SNP genomics data. Applied Soft Computing, 97, 106718. *doi: 10.1016/j.asoc.2020.106718*

[67] Modhej, N., Bastanfard, A., **Teshnehlab, M.,** & Raiesdana, S. (2020). Pattern separation network based on the hippocampus activity for handwritten recognition. IEEE Access, 8, 212803212817. *doi: 10.1109/ACCESS.2020.3040298*

[68] Mehralian, S., **Teshnehlab, M.,** & Nasersharif, B. (2020). Traffic data analysis using deep Elman and gated recurrent auto-encoder. Neural Network World, 30(6), 347. *doi: 10.14311/NNW.2020.30.023*

[69] Moradi Vartouni, A., **Teshnehlab, M.**, & Sedighian Kashi, S. (2020). Saosa: Stable adaptive optimization for stacked auto-encoders. Neural Processing Letters, 52(1), 823-848. *doi: 10.1007/s11063-020-10277-w*

[70] Ahmadi, G., & **Teshnelab, M.** (2020). Identification of multiple input-multiple output nonlinear system cement rotary kiln using stochastic gradient-based rough-neural network. Journal of AI and Data Mining, 8(3), 417-425. *doi: 10.22044/JADM.2020.8865.2021*

[71] Pirmoradi, S., **Teshnehlab, M.**, Zarghami, N., & Sharifi, A. (2020). The self-organizing restricted Boltzmann machine for deep representation with the application on classification problems. Expert Systems with Applications, 149, 113286. *doi: 10.1016/j.eswa.2020.113286*

[72] Sadr, H., Pedram, M. M., & **Teshnehlab, M.** (2020). Multi-view deep network: a deep model based on learning features from heterogeneous neural networks for sentiment analysis. IEEE Access, 8, 86984-86997. *doi: 10.1109/ACCESS.2020.2992063*

[73] Tafti, B. E. F., **Teshnehlab, M.**, & Khanesar, M. A. (2020). Recurrent interval type-2 fuzzy wavelet neural network with stable learning algorithm: application to model-based predictive control. International Journal of Fuzzy Systems, 22(2), 351-367. *doi: 10.1007/s40815-01900766-z*

[74] Lotfi, H., Pirmoradi, S., Mahmoudi, R., **Teshnehlab, M.**, Sheervalilou, R., Aval, S. F., & Zarghami, N. (2020). Machine learning as new promising technique for selection of significant features in obese women with type 2 diabetes. Hormone Molecular Biology and Clinical Investigation, 41(1). *doi: 10.1515/hmbci-2019-0019*

[75] Bakhshandeh, S., Azmi, R., & **Teshnehlab, M.** (2020). Symmetric uncertainty class-feature association map for feature selection in microarray dataset. International Journal of Machine Learning and Cybernetics, 11(1), 15-32. *doi: 10.1007/s13042-019-00932-7*

[76] Sadr, H., Nazari, M., Pedram, M. M., & **Teshnehlab, M.** (2019). Exploring the efficiency of topic-based models in computing semantic relatedness of geographic terms. International Journal of Web Research, 2(2), 23-35. *doi: 10.22133/IJWR.2020.225866.1056*

[77] Sadr, H., Pedram, M. M., & **Teshnehlab, M.** (2019). A robust sentiment analysis method based on sequential combination of convolutional and recursive neural networks. Neural Processing Letters, 50(3), 2745-2761. *doi: 10.1007/s11063-019-10049-1*

[78] Bakhshandeh, S., Azmi, R., & **Teshnehlab, M.** (2019). Graph-based feature selection using symmetrical uncertainty in microarray dataset. Journal of Information Systems and Telecommunication (JIST), 1(25), 35. *doi: 10.7508/jist.2019.01.004*

[79] **Teshnehlab, M.**, & Aliyari-shore-deli, M. (2019). Fault detection and identification of high dimension system by GLOLIMOT. International Journal of Industrial Electronics Control and Optimization, 2(4), 331-342. *doi: 10.22111/ieco.2019.27300.1095*

[80] Sadr, H., Pedram, M. M., & **Teshnelab, M.** (2019). Improving the performance of text sentiment analysis using deep convolutional neural network integrated with hierarchical attention layer. International Journal of Information & Communication Technology Research, 11(3), 57-67. *doi: https://iranjournals.nlai.ir/handle/123456789/554529*

[81] Orouskhani, M., **Teshnehlab, M.,** & Nekoui, M. A. (2019). Evolutionary dynamic multiobjective optimization algorithm based on Borda count method. International Journal of Machine Learning and Cybernetics, 10(8), 1931-1959. *doi: 10.1007/s13042-017-0695-3*

[82] Moradi Vartouni, A., **Teshnehlab, M.,** & Sedighian Kashi, S. (2019). Leveraging deep neural networks for anomaly-based web application firewall. IET Information Security, 13(4), 352361. *doi: 10.1049/iet-ifs.2018.5404*

[83] Moradkhani, N., & **Teshnehlab, M.** (2019). Identification of cement rotary kiln in noisy condition using takagi-sugeno neuro-fuzzy system. Journal of AI and Data Mining, 7(3), 367-375. *doi: 10.22044/JADM.2018.5295.1638*

[84] Taheriyan, F., **Teshnehlab, M.,** & Gharibzadeh, S. (2019). Presenting a neuroid model of wind-up based on dynamic synapse. Journal of Theoretical Biology, 465, 45-50. *doi: 10.1016/j.jtbi.2019.01.018*

[85] Jafarpisheh, N., & **Teshnehlab, M.** (2018). Cancers classification based on deep neural networks and emotional learning approach. IET Systems Biology, 12(6), 258-263. *doi: 10.1049/iet-syb.2018.5002*

[86] Jahani Moghaddam, M., Mojallali, H., & **Teshnehlab, M.** (2018). A multiple-input– single-output fractional-order hammerstein model identification based on modified neural network. Mathematical Methods in the Applied Sciences, 41(16), 6252-6271. *doi: 10.1002/mma.5136*

[87] Moghaddam, M. J., Mojallali, H., & **Teshnehlab, M.** (2018). Recursive identification of multiple-input single-output fractional-order Hammerstein model with time delay. Applied Soft Computing, 70, 486-500. *doi: 10.1016/j.asoc.2018.05.046*

[88] Aryabarzan, N., Minaei-Bidgoli, B., & **Teshnehlab, M.** (2018). negFIN: An efficient algorithm for fast mining frequent itemsets. Expert Systems with Applications, 105, 129-143. *doi: 10.1016/j.eswa.2018.03.041*

[89] Askari, E., Setarehdan, S. K., Sheikhani, A., Mohammadi, M. R., & **Teshnehlab, M.** (2018). Computationalmodelfordetectionofabnormalbrainconnectionsinchildrenwithautism. Journal of Integrative Neuroscience, 17(3), 237-248. *doi: 10.31083/JIN-180075*

[90] Askari, E., Setarehdan, S. K., Sheikhani, A., Mohammadi, M. R., & **Teshnehlab, M.** (2018). Modeling the connections of brain regions in children with autism using cellular neural networks and electroencephalography analysis. Artificial Intelligence in Medicine, 89, 40-50. *doi: 10.1016/j.artmed.2018.05.003*

[91]   Orouskhani, M., **Teshnehlab, M.**, & Nekoui, M. A. (2018). EMCSO: An elitist multi-objective cat swarm optimization. Journal of Optimization in Industrial Engineering, 11(2), 107-117. *doi: 10.22094/JOIE.2017.500.12*

[92]   Kosari, M., & **Teshnehlab, M.** (2018). Non-linear fractional-order chaotic systems identification with approximated fractional-order derivative based on a hybrid particle swarm optimization-genetic algorithm method. Journal of AI and Data Mining, 6(2), 365-373. *doi: 10.22044/JADM.2017.4670.1553*

[93]   Askari, E., Setarehdan, S. K., Sheikhani, A., Mohammadi, M., & **Teshnehlab, M.** (2018). Modelling the connections of brain regions for detecting the brain abnormalities due to diving based on electroencephalography. Iranian journal of Marine Technology, 4(4), 57-70. *doi: magiran.com/p1805665*

[94]   Ahmadi, G., **Teshnehlab, M.**, & Soltanian, F. (2018). A higher order online lyapunov-based emotional learning for rough-neural identifiers. Control and Optimization in Applied Mathematics, 3(1), 87-108. *doi: 10.30473/coam.2019.40779.1083*

[95]   Khoshhal Rudposhti, M., Nekoui, M. A., & **Teshnehlab, M.** (2018). Design of robust optimal regulator considering state and control nonlinearities. Systems Science & Control Engineering, 6(1), 150-159. *doi: 10.1080/21642583.2018.1471751*

[96]   Askari, E., Setarehdan, S. K., Sheikhani, A., Mohammadi, M. R., & **Teshnehlab, M.** (2018). Designing a model to detect the brain connections abnormalities in children with autism using 3D-cellular neural networks. Journal of Integrative Neuroscience, 17(3-4), 391-411. *doi: 10.3233/JIN-180075*

[97]   Khoshhal Rudposhti, M., Nekoui, M. A., & **Teshnehlab, M.** (2018). Robust optimal control for a class of nonlinear systems with uncertainties and external disturbances based on SDRE. Cogent Engineering, 5(1), 1451014. *doi: 10.1080/23311916.2018.1451014*

[98]   Jafari, P., **Teshnehlab, M.**, & Tavakoli-Kakhki, M. (2018). Adaptive type-2 fuzzy system for synchronization and stabilization of chaotic non-linear fractional order systems. IET Control Theory & Applications, 12(2), 183-193. *doi: 10.1049/iet-cta.2017.0785*

[99]   Mohtashami, H., Movaghar, A., & **Teshnehlab, M.** (2017). Multi-objective node placement considering non-uniform event pattern. Wireless Personal Communications, 97(4), 6189-6220. *doi: 10.1007/s11277-017-4834-7*

[100] Rasti, R., **Teshnehlab, M.**, & Phung, S. L. (2017). Breast cancer diagnosis in DCE-MRI using mixture ensemble of convolutional neural networks. Pattern Recognition, 72, 381-390. *doi: 10.1016/j.patcog.2017.08.004*

[101] Jafari, P., **Teshnehlab, M.**, & Tavakoli-Kakhki, M. (2017). Synchronization and stabilization of fractional order nonlinear systems with adaptive fuzzy controller and compensation signal. Nonlinear Dynamics, 90(2), 1037-1052. *doi: 10.1007/s11071-017-3709-5*

[102] Nasrinpour, H. R., Massah Bavani, A., & **Teshnehlab, M.** (2017). Grouped bees algorithm: a grouped version of the bees algorithm. Computers, 6(1), 5. *doi: 10.3390/computers6010005*

[103] Orouskhani, M., **Teshnehlab, M.,** & Nekoui, M. A. (2016). Integration of cat swarm optimization and Borda ranking method for solving dynamic multi-objective problems. International Journal of Computational Intelligence and Applications, 15(03), 1650014. *doi: 10.1142/S1469026816500140*

[104] Ahmadi, G., & **Teshnehlab, M.** (2016). Designing and implementation of stable sinusoidal rough-neural identifier. IEEE Transactions on Neural Networks and Learning Systems, 28(8), 1774-1786. *doi: 10.1109/TNNLS.2016.2551303*

[105] Sharafi, Y., Khanesar, M. A., & **Teshnehlab, M.** (2016). COOA: Competitive optimization algorithm. Swarm and Evolutionary Computation, 30, 39-63. *doi: 10.1016/j. swevo.2016.04.002*

[106] Shirkhani, N., Khanesar, M. A., & **Teshnehlab, M.** (2016). Indirect model reference fuzzy control of SISO fractional order nonlinear chaotic systems. Procedia Computer Science, 102, 309-316. *doi: 10.1016/j.procs.2016.09.406*

[107] Bahrami, V., Mansouri, M., & **Teshnehlab, M.** (2016). Designing robust model reference hybrid fuzzy controller based on LYAPUNOV for a class of nonlinear systems. Journal of Intelligent & Fuzzy Systems, 31(3), 1545-1564. *doi: 10.3233/JIFS-151488*

[108] Mansouri, M., **Teshnehlab, M.,** & Shoorehdeli, M. A. (2016). Indirect adaptive hierarchical fuzzy sliding mode **controller** for a class of nonlinear systems. Journal of Intelligent & Fuzzy Systems, 30(3), 1377-1391. *doi: 10.3233/IFS-152051*

[109] Aghajari, Z. H., **Teshnehlab, M.,** & Motlagh, M. J. (2015). A novel chaotic hetero-associative memory. Neurocomputing, 167, 352-358. *doi: 10.1016/j.neucom.2015.04.060*

[110] Alibakhshi, F., **Teshnehlab, M.,** Alibakhshi, M., & Mansouri, M. (2015). Designing stable neural identifier based on Lyapunov method. Journal of AI and Data Mining, 3(2), 141-147. *doi: 10.5829/IDOSI.JAIDM.2015.03.02.03*

[111] Tabatabaei, S., **Teshnehlab, M.,** & Mirabedini, S. J. (2015). Fuzzy-based routing protocol to increase throughput in mobile ad hoc networks. Wireless Personal Communications, 84(4), 2307-2325. *doi: 10.1007/s11277-015-2706-6*

[112] Alibakhshi, F., **Teshnehlab, M.,** Alibakhshi, M., & Mansouri, M. (2015). Nonlinear adaptive neural identifier filter with optimal learning rate for converging of parameters based on gradient descent. Computational Intelligence in Electrical Engineering, 6(2), 75-86. *doi: magiran.com/p1473499*

[113] Dehghani, R., Ghorbani, M. A., **Teshnehlab, M.,** Rikhtehgar Gheasi, A., & Asadi, E. (2015). Comparison and evalution of Bayesian neural network, gene expression programming, support vector machine and multiple linear regression in river discharge estimation (case study: Sufi Chay basin). Irrigation and Water Engineering, 5(4), 65-85.

[114] Ashtari Mahini, M., **Teshnehlab, M.,** & Ahmadieh Khanehsar, M. (2015). Nonlinear System Identification Using Hammerstein-Wiener Neural Network and subspace algorithms. Journal of Advances in Computer Engineering and Technology, 1(3), 1-8.

[115] Tabatabaei, S., **Teshnehlab, M.,** & Mirabedini, S. J. (2015). A new routing protocol to increase throughput in mobile ad hoc networks. Wireless Personal Communications, 83(3), 1765-1778. *doi: 10.1007/s11277-015-2475-2*

[116] Mansouri, M., **Teshnehlab, M.,** & Shoorehdeli, M. A. (2015). Adaptive variable structure hierarchical fuzzy control for a class of high-order nonlinear dynamic systems. ISA transactions, 56, 28-41. *doi: 10.1016/j.isatra.2014.11.014*

[117] Fallah, Z., Khanesar, M. A., & **Teshnehlab, M.** (2015). Design of a hierarchical fuzzy model predictive controller. International Journal of Engineering & Technology, 4(2), 342-349. *doi: 10.14419/ijet.v4i2.2854*

[118] Ghomsheh, V. S., **Teshnehlab, M.,** Shoorehdeli, M. A., & Khanesar, M. A. (2014). Neural Networks for Normative Knowledge Source of Cultural Algorithm. International Journal of Computational Intelligence Systems, 7(5), 979-992. *doi: 10.1080/18756891.2013.870755*

[119] Havangi, R., Nekoui, M. A., **Teshnehlab, M.,** & Taghirad, H. D. (2014). A SLAM based on auxiliary marginalised particle filter and differential evolution. International Journal of Systems Science, 45(9), 1913-1926. *doi: 10.1080/00207721.2012.759299*

[120] Havangi, R., Nekoui, M. A., & **Teshnehlab, M.** (2014). An optimization based method for simultaneous localization and mapping. International Journal of Control, Automation and Systems, 12(4), 823-832. *doi: 10.1007/s12555-012-9503-8*

[121] Rezaee, A., Rahmani, A. M., Movaghar, A., & **Teshnehlab, M.** (2014). Formal process algebraic modeling, verification, and analysis of an abstract fuzzy inference cloud service. The Journal of Supercomputing, 67(2), 345-383. *doi: 10.1007/s11227-013-1005-9*

[122] Safa, B., Khalili, A., **Teshnehlab, M.,** & Liaghat, A. (2014). Artificial Neural Networks (ANNs) application to predict occurrence of phenological stages in wheat using climatic data. International Journal of Agricultural Policy and Research, 2(10), 352-361. *doi: http://dx.doi.org/10.15739/IJAPR.007*

[123] Khalajzadeh, H., Mansouri, M., & **Teshnehlab, M.** (2014). Face recognition using convolutional neural network and simple logistic classifier. In Soft computing in industrial applications (pp. 197-207). Springer. *doi: 10.1007/978-3-319-00930-8_18*

[124] Mehri, L., Salimifar, M., Mansouri, M., &**Teshnelab, M.**(2013). SlidingModeTrainedNeural Control for Single and Coupled Inverted Pendulum System. Researches and Applications in Mechanical Engineering, 2(4), 125-130.

[125] Mohammadzadeh, A., Kaynak, O., & **Teshnehlab, M.** (2013). Two-mode indirect adaptive control approach for the synchronization of uncertain chaotic systems by the use of a hierarchical

interval type-2 fuzzy neural network. IEEE Transactions on Fuzzy Systems, 22(5), 1301-1312. *doi: 10.1109/TFUZZ.2013.2291568*

[126] Massah B, A., Zamani, A., Salehinia, Y., Aliyari Sh, M., & **Teshnehlab, M.** (2013). A hybrid controller based on CPG and ZMP for biped locomotion. Journal of Mechanical Science and Technology, 27(11), 3473-3486. *doi: 10.1007/s12206-013-0871-7*

[127] Masoudinezad, Z., Abadi, A. H., & **Teshnehlab, M.** (2013). Mapping Fuzzy Petri Net to Fuzzy Extended Markup Language. International Journal of Electrical and Computer Engineering, 3(5), 696. *doi: http://dx.doi.org/10.11591/ijece.v3i5.4035*

[128] Khalajzadeh, H., Mansouri, M., & **Teshnehlab, M.** (2013). Hierarchical structure based convolutional neural network for face recognition. International Journal of Computational Intelligence and Applications, 12(03), 1350018. *doi: 10.1142/S1469026813500181*

[129] Havangi, R., **Teshnehlab, M.**, Nekoui, M. A., & Taghirad, H. D. (2013). A novel particle filter based SLAM. International Journal of Humanoid Robotics, 10(03), 1350018. *doi: 10.1142/S0219843613500187*

[130] Mashhadi, P. S., Shoorehdeli, M. A., & **Teshnehlab, M.** (2013). Patterns with different phases but same statistics. JOSA A, 30(9), 1796-1805. *doi: 10.1364/JOSAA.30.001796*

[131] Havangi, R., Taghirad, H. D., Nekoui, M. A., & **Teshnehlab, M.** (2013). A square root unscented FastSLAM with improved proposal distribution and resampling. IEEE Transactions on Industrial Electronics, 61(5), 2334-2345. *doi: 10.1109/TIE.2013.2270211*

[132] Orouskhani, M., Mansouri, M., Orouskhani, Y., & **Teshnehlab, M.** (2013). A hybrid method of modified cat swarm optimization and gradient descent algorithm for training ANFIS. International Journal of Computational Intelligence and Applications, 12(02), 1350007. *doi: 10.1142/S1469026813500077*

[133] Keyvanfard, F., Shoorehdeli, M. A., **Teshnehlab, M.**, Nie, K., & Su, M. Y. (2013). Specificity enhancement in classification of breast MRI lesion based on multi-classifier. Neural Computing and Applications, 22(1), 35-45. *doi: 10.1007/s00521-012-0937-y*

[134] Havangi, R., Nekoui, M. A., Taghirad, H. D., & **Teshnehlab, M.** (2013). An intelligent UFastSLAM with MCMC move step. Advanced Robotics, 27(5), 311-324. *doi: 10.1080/01691864.2013.763721*

[135] Khanesar, M. A., **Teshnehlab, M.**, & Kaynak, O. (2013). Observer-based indirect model reference fuzzy control system with application to control of chaotic systems. Journal of the Franklin Institute, 350(3), 419-436. *doi: 10.1016/j.jfranklin.2012.11.014*

[136] Farivar, F., Shoorehdeli, M. A., **Teshnehlab, M.**, & Nekoui, M. A. (2013). Modified projective synchronization of unknown chaotic dissipative gyroscope systems via Gaussian radial basis adaptive variable structure control. Journal of Vibration and Control, 19(4), 491-507. *doi: 10.1177/1077546311432566*

[137] Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2013). Synchronization of underactuated unknown heavy symmetric chaotic gyroscopes via optimal gaussian radial basis adaptive variable structure control. IEEE Transactions on control systems technology, 21(6), 2374-2379. *doi: 10.1109/TCST.2012.2227965*

[138] Orouskhani, M., Orouskhani, Y., Mansouri, M., & **Teshnehlab, M.** (2013). A novel cat swarm optimization algorithm for unconstrained optimization problems. International Journal of Information Technology and Computer Science, 5(11), 32-41. *doi: 10.5815/ijitcs.2013.11.04*

[139] Sharifi, A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2013). Hierarchical wavelet packet fuzzy inference system for pattern classification and system identification. International Journal of Systems Science, 44(1), 109-126. *doi: 10.1080/00207721.2011.583998*

[140] Razmi, H., Shayanfar, H. A., & **Teshnehlab, M.** (2012). Steady state voltage stability with AVR voltage constraints. International Journal of Electrical Power & Energy Systems, 43(1), 650-659. *doi: 10.1016/j.ijepes.2012.06.051*

[141] Razmi, H., **Teshnehlab, M.**, & Shayanfar, H. A. (2012). Neural network based on a genetic algorithm for power system loading margin estimation. IET Generation, Transmission & Distribution, 6(11), 1153-1163. *doi: 10.1049/iet-gtd.2012.0090*

[142] Naghibi, S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2012). Breast cancer classification based on advanced multi dimensional fuzzy neural network. Journal of Medical Systems, 36(5), 27132720. *doi: 10.1007/s10916-011-9747-5*

[143] Farivar, F., Nekoui, M. A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). Modified projective synchronization of chaotic dissipative gyroscope systems via backstepping control. Indian Journal of Physics, 86(10), 901-906. *doi: 10.1007/s12648-012-0139-6*

[144] Farivar, F., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). An interdisciplinary overview and intelligent control of human prosthetic eye movements system for the emotional support by a huggable pet-type robot from a biomechatronical viewpoint. Journal of the Franklin Institute, 349(7), 2243-2267. *doi: 10.1016/j.jfranklin.2011.04.014*

[145] Khanesar, M. A., **Teshnehlab, M.**, & Kaynak, O. (2012). Control and synchronization of chaotic systems using a novel indirect model reference fuzzy controller. Soft Computing, 16(7), 1253-1265. *doi: 10.1007/s00500-012-0810-z*

[146] Sharifi, A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). Design of a prediction model for cement rotary kiln using wavelet projection fuzzy inference system. Cybernetics and Systems, 43(5), 369-397. *doi: 10.1080/01969722.2012.688679*

[147] Falahiazar, Z., Rohani, M., Falahiazar, L., & **Teshnelab, M.** (2012). Optimizing an intrusion tolerant database system using neural network. International Journal of Database Theory and Application, 5(2), 83-98. *doi: 10.3923/ijscomp.2012.224.234*

[148] Khalajzadeh, H., Mansouri, M., & **Teshnehlab, M.** (2012). Persian signature verification using convolutional neural networks. International Journal of Engineering Research and Technology, 1(2), 7-12.

[149] Barimani, N., Moshiri, B., & **Teshnehlab, M.** (2012). State space modeling and short-term traffic speed prediction using Kalman filter based on ANFIS. International Journal of Engineering and Technology, 4(2), 116. *doi: 10.7763/IJET.2012.V4.330*

[150] Abbaszadeh, K., Alam, F. R., & **Teshnehlab, M.** (2012). Slot opening optimization of surface mounted permanent magnet motor for cogging torque reduction. Energy Conversion and Management, 55, 108-115. *doi: 10.1016/j.enconman.2011.10.014*

[151] Alhomod, S. M., Shafi, M. M., Kousarrizi, M. N., Seiti, F., **Teshnehlab, M.**, Susanto, H., & Batawi, Y. A. (2012). Best practices in E government: A review of some Innovative models proposed in different countries. International Journal of Electrical & Computer Sciences, 12(1), 1-6.

[152] Sharifi, A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). Identification of cement rotary kiln using hierarchical wavelet fuzzy inference system. Journal of the Franklin Institute, 349(1), 162-183. *doi: 10.1016/j.jfranklin.2011.10.012*

[153] Kousarrizi, M. N., Seiti, F., & **Teshnehlab, M.** (2012). An experimental comparative study on thyroid disease diagnosis based on feature subset selection and classification. International Journal of Electrical & Computer Sciences IJECS-IJENS, 12(01), 13-20.

[154] Farivar, F., Aliyari Shoorehdeli, M., Nekoui, M. A., & **Teshnehlab, M.** (2012). Chaos control and modified projective synchronization of unknown heavy symmetric chaotic gyroscope systems via Gaussian radial basis adaptive backstepping control. Nonlinear Dynamics, 67(3), 1913-1941. *doi: 10.1007/s11071-011-0118-z*

[155] Maleki, M., **Teshnehlab, M.**, & Nabavi, M. (2012). Diagnosis of multiple sclerosis (MS) using convolutional neural network (CNN) from MRIs. Global Journal of Medicinal Plant Research, 1(1), 50-54.

[156] Richards, C. G., Ehlers, P. J., Nicolae, D. V., Monacelli, E., Hamam, Y., Zarch, M. G., **Teshnehlab, M.**, et al. (2012). A Review of the State of the Art of Modulation Techniques and Control Strategies for Matrix Converters. A Review of the State of the Art of Modulation Techniques and Control Strategies for Matrix Converters, International Review of Autonomic Control 5(3), 309-316.

[157] Zarch, M. G., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). Fault detection of nonlinear systems based on Takagi-Sugeno fuzzy models by parity relations. A Review of the State of the Art of Modulation Techniques and Control Strategies for Matrix Converters, 309.

[158] Havangi, R., Nekoui, M. A., & **Teshnehlab, M.** (2012). An improved FastSLAM framework using soft computing. Turkish Journal of Electrical Engineering and Computer Sciences, 20(1), 25-46. *doi: 10.3906/elk-1004-504*

[159] Tabatabaei, S., & **Teshnehlab, M.** (2012). Power-Efficient Reliable Routing Protocol to Increase Throughput in Ad hoc Networks. Intrnational journal of Soft Computing, 2(3), 259-263

[160] Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2012). Chaos control and generalized projective synchronization of heavy symmetric chaotic gyroscope systems via Gaussian radial basis adaptive variable structure control. Chaos, Solitons & Fractals, 45(1), 80-97. *doi: 10.1016/j.chaos.2011.10.008*

[161] Farivar, F., Aliyari Shoorehdeli, M., Nekoui, M. A., & **Teshnehlab, M.** (2012). Generalized Projective Synchronization of Chaotic Heavy Gyroscope Systems via Sliding Rule-Based Fuzzy Control. International Scholarly Research Notices, 2012. *doi: 10.5402/2012/576873*

[162] Rostami Kandroodi, M., Mansouri, M., Aliyari Shoorehdeli, M., & **Teshnehlab, M.** (2012). Control of flexible joint manipulator via reduced rule-based fuzzy control with experimental validation. International Scholarly Research Notices, 2012. *doi: 10.5402/2012/309687*

[163] Mohammadi, Z., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2011). Designing flexible neurofuzzy system based on sliding mode controller for magnetic levitation systems. International Journal of Computer Science Issues (IJCSI), 8(4), 160.

[164] Khanesar, M. A., Kayacan, E., **Teshnehlab, M.**, & Kaynak, O. (2011). Analysis of the noise reduction property of type-2 fuzzy logic systems using a novel type-2 membership function. IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics), 41(5), 1395-1406. *doi: 10.1109/TSMCB.2011.2148173*

[165] Khanesar, M. A., Kayacan, E., **Teshnehlab, M.**, & Kaynak, O. (2011). Extended Kalman filter based learning algorithm for type-2 fuzzy logic systems and its experimental evaluation. IEEE Transactions on Industrial Electronics, 59(11), 4443-4455. *doi: 10.1109/TIE.2011.2151822*

[166] Khanesar, M. A., Kaynak, O., & **Teshnehlab, M.** (2011). Direct model reference Takagi– Sugeno fuzzy control of SISO nonlinear systems. IEEE Transactions on Fuzzy Systems, 19(5), 914-924. *doi: 10.1109/TFUZZ.2011.2150757*

[167] Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2011). Generalized projective synchronization of uncertain chaotic systems with external disturbance. Expert Systems with Applications, 38(5), 4714-4726. *doi: 10.1016/j.eswa.2010.08.104*

[168] Havangi, R., **Teshnehlab, M.**, & Nekoui, M. A. (2011). A novel adaptive neuro-fuzzy unscented Kalman filter for SLAM. International Journal of Humanoid Robotics, 8(01), 223-243. *doi: 10.1142/S0219843611002411*

[169] Rouhifar, M., Hosseinzadeh, M., & **Teshnehlab, M.** (2011). A new approach to Overflow detection in moduli set 2n-1, 2n, 2n+ 1. International Journal of Computational Intelligence and Information Security, 8(3), 35-43.

[170] Keyvanfard, F., Shoorehdeli, M. A., &**Teshnehlab, M.** (2011). Feature selection and classification of breast cancer on dynamic magnetic resonance imaging using ANN and SVM. American Journal of Biomedical Engineering, 1(1), 20-25. *doi: 10.5923/j.ajbe.20110101.04*

[171] Shahvandi, L. K., **Teshnehlab, M.,** & Haroonabadi, A. (2011). Multi-level clustering by imperialist competitive algorithm in wireless sensor networks. International Journal of Advanced Engineering Science and Technology, 9(2), 327-332.

[172] Maghsoudpour, A., Ghaffari, A., & **Teshnehlab, M.** (2011). Development and Analysis of a Stoichiometric Model of Candidate Bacterium for Bioethanol Production Clostridium Thermocellum. International Journal of Computer Applications, 975, 8887.

[173] Shafiabady, N., **Teshnehlab, M.,** & Nekoui, M. A. (2011). Applying S. T. (ShafiabadyTeshnehlab) Evolutionary Optimization Algorithm to Solve Constraint Optimization Problem. InternationalJournalofIntelligentInformationProcessing, 2(4). *doi: 10.4156/ijiip.vol2.issue4.6*

[174] Shahvandi, L. K., **Teshnehlab, M.,** & Haroonabadi, A. (2011). A novel clustering in wireless sensor networks used by imperialist competitive algorithm. International Journal of Advanced Engineering Science and Technology, 8(2), 276-280.

[175] Maghsoudpour, A., Ghaffari, A., & **Teshnehlab, M.** (2011). Development of a differential evolutionary algorithm application in optimizing microbial metabolic system. International Journal of Computer Applications, 975, 8887.

[176] Rouhifar, M., Hosseinzadeh, M., Bahanfar, S., & **Teshnehlab, M.** (2011). Fast Overflow Detection in Moduli Set 2n–1, 2n, 2n+ 1. IJCSI International Journal of Computer Science Issues, 8(3), 407-414.

[177] Khanesar, M. A., **Teshnehlab, M.,** & Kaynak, O. (2011). Model reference fuzzy control of nonlinear dynamical systems using an optimal observer. Acta Polytechnica Hungarica, 8(4), 35-54.

[178] Sharifi, A., Aliyari Shoorehdeli, M., & **Teshnehlab, M.** (2010). Semi-polynomial Takagi-Sugeno-Kang type fuzzy system for system identification and pattern classification. Journal of Control, 4(3), 15-28. *doi: 20.1001.1.20088345.1389.4.3.2.4*

[179] Qaderi, K., Arab, D. R., **Teshnehlab, M.,** & Ghazagh, A. (2010). Intelligent operation modeling of reservoirs using group method of data handling (GMDH). Iran-Water Resources Research, 6(3), 55-67. *doi: magiran.com/p897386*

[180] Behnia, S., **Teshnehlab, M.,** & Ayubi, P. (2010). Multiple-watermarking scheme based on improved chaotic maps. Communications in Nonlinear Science and Numerical Simulation, 15(9), 2469-2478. *doi: 10.1016/j.cnsns.2009.09.042*

[181] Khanmirzaei, Z., & **Teshnehlab, M.** (2010). Prediction using recurrent neural network based fuzzy inference system by the modified bees algorithm. International Journal of Computer Science and Technology, 2(2), 42-55.

[182] Havangi, R., Nekoui, M.A., &**Teshnehlab, M.**(2010). Amultiswarmparticlefilterformobile robot localization. International Journal of Computer Science and Technology, 7(3), 15-22.

[183] Sadeghzadeh, M., & **Teshnehlab, M.** (2010). Correlation-based Feature Selection using Ant Colony Optimization. International Journal of Mathematical and Computational Sciences, 4(4), 473-478. *doi: 10.5281/zenodo.1082665*

[184] Kaki, L., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2010). Classification of Multi-Class Datasets Using 2D Membership Functions in TSK Fuzzy System. International Journal of Computer Science and Technology, 2(1), 33-40. *doi: 10.4156/ijact.vol2.issue1.3*

[185] Forouzanfar, M., Forghani, N., & **Teshnehlab, M.** (2010). Parameter optimization of improved fuzzy c-means clustering algorithm for brain MR image segmentation. Engineering Applications of Artificial Intelligence, 23(2), 160-168. *doi: 10.1016/j.engappai.2009.10.002*

[186] Sadeghzadeh, M., **Teshnehlab, M.**, & Badie, K. (2010). Feature selection using combine of genetic algorithm and ant colony optimization. In Soft Computing in Industrial Applications (pp. 127-135). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-642-11282-9_14*

[187] Khanesar, M. A., & **Teshnehlab, M.** (2010). Direct fuzzy model reference controller for siso nonlinear plants using observer. International Journal of Innovative Computing, Information and Control, 6(1), 297-306.

[188] Farivar, F., Nekoui, M., **Teshnehlab, M.**, & Shoorehdeli, M. (2010). Neural sliding mode control for chaos synchronization of uncertain nonlinear gyros. Advances and Applications in Mathematical Sciences, 4(1), 41-56.

[189] Noruzi Nashalji, M., Aliyari Shoorehdeli, M., & **Teshnehlab, M.** (2010). Fault detection of the Tennessee Eastman process using improved PCA and neural classifier. In Soft computing in industrial applications (pp. 41-50). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-64211282-9_5*

[190] Alilou, V. K., & **Teshnehlab, M.** (2010). Prediction of 28-day compressive strength of concrete on the third day using artificial neural networks. International Journal of Engineering, 3(6), 565-576.

[191] Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2009). Generalized projective synchronization for chaotic systems via Gaussian radial basis adaptive backstepping control. Chaos, Solitons & Fractals, 42(2), 826-839. *doi: 10.1016/j.chaos.2009.02.012*

[192] Pasdarpour, M., Ghazavi, M., **Teshnehlab, M.**, & Sadrnejad, S. A. (2009). Optimal design of soil dynamic compaction using genetic algorithm and fuzzy system. Soil Dynamics and Earthquake Engineering, 29(7), 1103-1112. *doi: 10.1016/j.soildyn.2008.09.003*

[193] Farivar, F., Aliyari Shoorehdeli, M., **Teshnehlab, M.**, & Nekoui, M. A. (2009). Hybrid control of flexible manipulator. Journal of Applied Sciences, 9(4), 639-650. *doi: 10.3923/jas.2009.639.650*

[194] Sabahi, K., & **Teshnehlab, M.** (2009). Recurrent fuzzy neural network by using feedback error learning approaches for LFC in interconnected power system. Energy Conversion and Management, 50(4), 938-946. *doi: 10.1016/j.enconman.2008.12.028*

[195] Shoorehdeli, M. A., **Teshnehlab, M.**, & Sedigh, A. K. (2009). Training ANFIS as an identifier with intelligent hybrid stable learning algorithm based on particle swarm optimization and extended Kalman filter. Fuzzy Sets and Systems, 160(7), 922-948. *doi: 10.1016/j.fss.2008.09.011*

[196] Naeimi, M., **Teshnehlab, M.**, Aliyari Sh, M., & Aliasghary, M. (2009). Stable direct adaptive control as nonlinear hybrid controller for flexible manipulator. Journal of Applied Sciences,

9(7), 1258-1266. *doi: 10.3923/jas.2009.1258.1266*

[197] Shoorehdeli, M. A., **Teshnehlab, M.**, Sedigh, A. K., & Khanesar, M. A. (2009). Identification using ANFIS with intelligent hybrid stable learning algorithm approaches and stability analysis of training methods. Applied Soft Computing, 9(2), 833-850. *doi: 10.1016/j.asoc.2008.11.001*

[198] Habibizad, A., Es-Hagi, S. H., Fesharaki, M. N., Mirnia, M., & **Teshnelab, M.** (2009). Dataoriented model of sine based on Chebyshev zeroes. Journal of Applied Sciences, 9(5), 993-996. *doi: 10.3923/jas.2009.993.996*

[199] Aliyari Shoorehdeli, M., **Teshnehlab, M.**, & Sedigh, A. K. (2009). Identification using ANFIS with intelligent hybrid stable learning algorithm approaches. Neural Computing and Applications, 18(2), 157-174. *doi: 10.1007/s00521-007-0168-9*

[200] Ghanbari, A. A., Kousarrizi, M. N., **Teshnehlab, M.**, & Aliyari, M. (2009). An evolutionary artifact rejection method for brain computer interface using ICA. International Journal of Electrical & Computer Sciences, 9(9), 48-53.

[201] Forghani, N., Forouzanfar, M., Eftekhari, A., Mohammad-Moradi, S., & **Teshnehlab, M.** (2009). Application of particle swarm optimization in accurate segmentation of brain MR images. Particle Swarm Optimization, InTech, 203-222.

[202] Eftekhari, A., Khanesar, M. A., Forouzanfar, M., & **Teshnehlab, M.** (2009). Incremental locally linear fuzzy classifier. In Applications of Soft Computing (pp. 305-314). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-540-89619-7_30*

[203] Farivar, F., Shoorehdel, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2009). Gaussian radial basis adaptive backstepping control for a class of nonlinear systems. Journal of Applied Sciences, 9(2), 248-257. *doi: 10.3923/jas.2009.248.257*

[204] Haroonabadi, A., & **Teshnehlab, M.** (2009). Behavior modeling in uncertain information systems by fuzzy-UML. International Journal of Soft Computing, 4(1), 32-38.

[205] Sabahi, K., Sharifi, A., Aliyari Sh, M., **Teshnehlab, M.**, & Aliasghary, M. (2008). Load frequency control in interconnected power system using multi-objective PID controller. Journal of Applied Sciences, 8(20), 3676-3682. *doi: 10.3923/jas.2008.3676.3682*

[206] Zeinali Kh, E., Fesharaki, M. N., & **Teshnehlab, M.** (2008). Optimal design of switch sizes in strictly non-blocking Clos three-stage interconnection networks. Journal of Applied Sciences, 8(22), 4234-4237. *doi: 10.3923/jas.2008.4234.4237*

[207] Mirabedini, S. J., **Teshnehlab, M.,** Shenasa, M. H., Movaghar, A., & Rahmani, A. M. (2008). AFAR: adaptive fuzzy ant-based routing for communication networks. Journal of Zhejiang University-SCIENCE A, 9(12), 1666-1675. *doi: 10.1631/jzus.A0820118*

[208] Mirabedini, S. J., **Teshnehlab, M.,** Shenasa, M. H., & Rahmani, A. M. (2008). FLAR: an adaptive fuzzy routing algorithm for communications networks using mobile ants. Cybernetics and Systems: An International Journal, 39(7), 686-704. *doi: 10.1080/01969720802257915*

[209] Aliasghary, M., **Teshnehlab, M.,** Jalilvand, A., Aliyari Sh, M., & Nekoui, M. A. (2008). Hybrid control of magnetic levitation system based-on new intelligent sliding mode control. Journal of Applied sciences, 8(14), 2561-2568. *doi: 10.3923/jas.2008.2561.2568*

[210] Haroonabadi, A., & **Teshnehlab, M.** (2008). A novel method for behavior modeling in uncertain information systems. International Journal of Computer and Systems Engineering, 2(5), 1523-1530. *doi: doi.org/10.5281/zenodo.1057639*

[211] Zounemat-Kermani, M., & **Teshnehlab, M.** (2008). Using adaptive neuro-fuzzy inference system for hydrological time series prediction. Applied Soft Computing, 8(2), 928-936. *doi: 10.1016/j.asoc.2007.07.011*

[212] Shakiba, M., **Teshnehlab, M.,** Zokaie, S., & Zakermoshfegh, M. (2008). Short-term prediction of traffic rate interval router using hybrid training of dynamic synapse neural network structure. Journal of Applied Sciences, 8(8), 1534-1540. *doi: 10.3182/20080706-5-KR-1001.01194*

[213] Shoorehdeli, M. A., **Teshnehlab, M.,** & Sedigh, A. K. (2008). Stable learning algorithm approaches for ANFIS as an identifier. IFAC Proceedings Volumes, 41(2), 7046-7051. *doi: 10.1007/978-0-387-76312-5_22*

[214] Hashemi, S. M., **Teshnehlab, M.,** & Razzazi, M. (2008). Unbundling business processes to fine-grained e-Services through the next generation EIS frameworks. In Research and Practical Issues of Enterprise Information Systems II (pp. 983-991). Springer, Boston, MA. *doi: 10.1109/ICTTA.2008.4529917*

[215] Habibizad Navin, A., Naghian Fesharaki, M., Mirnia, M., & **Teshnehlab, M.** (2008). mathematical discussions about data oriented modeling of uniform random variable. Journal of Applied Sciences, 8(6), 1113-1117. *doi: 10.3923/jas.2008.1113.1117*

[216] Navin, A. H., Fesharaki, M. N., **Teshnelab, M.,** & Shahamatnia, E. (2007). Fuzzy based broblem-solution data structureas a data oriented model for ABS controlling. International Journal of Computer and Information Engineering, 1(12), 3793-3798. *doi: doi.org/10.5281/zenodo.1073585*

[217] Navin, A. H., Fesharaki, M. N., Mirnia, M., **Teshnelab, M.,** & Shahamatnia, E. (2007). Data oriented modeling of uniform random variable: Applied approach. International Journal of Computer and Information Engineering, 1(11), 3389-3392. *doi: doi.org/10.5281/zenodo.1054917*

[218] Navin, A. H., Sadighi, A., Fesharaki, M. N., Mirnia, M., **Teshnelab, M.,** & Keshmiri, R. (2007). Data Oriented Model of image: as a framework for image processing. International Journal of Computer and Information Engineering, 1(10), 2961-2964. *doi: 10.5281/zenodo.1327687*

[219] Mohsenzadeh, M., Shams, F., & **Teshnehlab, M.** (2007). LOWL: Logic and OWL, an extension. International Journal of Computer and Information Engineering, 1(4), 1141-1145. *doi: doi.org/10.5281/zenodo.1071097*

[220] Gholami, M., Hashemi, S. M., & **Teshnelab, M.** (2007). A framework for secure message transmissionusingSMS-basedVPN.InResearchandPracticalIssuesofEnterpriseInformation Systems II (pp. 503-511). Springer, Boston, MA. *doi: 10.1007/978-0-387-75902-9_55*

[221] Seyed, J. M., & **Mohammad, T.** (2007). FuzzyAntNet: a novel multi-agent routing algorithm for communications networks. Computer Sciences and Telecommunications, (1), 45-49.

[222] Daeinabi, K., & **Teshnehlab, M.** (2006). Seam tracking of intelligent arc welding robot. WSEAS Transactions on Systems, 5(11), 2600-2605.

[223] Bevrani, H., Hiyama, T., Mitani, Y., Tsuji, K., & **Teshnehlab, M.** (2006). Load-frequency regulationunderabilateralLFCschemeusingflexibleneuralnetworks. EngineeringIntelligent Systems, 14(2), 109-117. *doi: https://eprints.qut.edu.au/13449/*

[224] Hashemi, S. M., Razzazi, M., & **Teshnehlab, M.** (2006). ISRUP E-service framework balanced scorecard to measure the capabilities from the methodologies, processes, notations, life cycles, and standards. In Research and Practical Issues of Enterprise Information Systems (pp. 255-259). Springer, Boston, MA. *doi: 10.1007/0-387-34456-X_26*

Refereed Conference Proceedings

[1] Saffari, M., Khodayar, M., & **Teshnehlab, M.** (2021, July). Random wights rough neural network for glaucoma diagnosis. In The International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (pp. 534-545). Springer, Cham. *doi: 10.1007/9783-030-89698-0_55*

[2] Zaferani, E. J., **Teshnehlab, M.,** & Vali, M. (2021, March). Automatic personality perception using autoencoder and hierarchical fuzzy classification. In 2021 26th International Computer Conference, Computer Society of Iran (CSICC) (pp. 1-7). IEEE. *doi: 10.1109/CSICC52343.2021.9420627*

[3] Safari, A., Mehralian, S., & **Teshnehlab, M.** (2020, September). Full-car active suspension system identification using flexible deep neural network. In 2020 8th Iranian Joint Congress on Fuzzy and intelligent Systems (CFIS) (pp. 191-198). IEEE. *doi:*

10.1109/CFIS49607.2020.9238686

[4]   Tousi, S. M. A., Mostafanasab, A., & **Teshnehlab, M.** (2020, September). Design of self tuning
PID controller based on competitional PSO. In 2020 4th Conference on Swarm Intelligence and
Evolutionary Computation (CSIEC) (pp. 022-026). IEEE. *doi:*
10.1109/CSIEC49655.2020.9237318

[5]   Siar, M., & **Teshnehlab, M.** (2019, October). Brain tumor detection using deep neural network
and machine learning algorithm. In 2019 9th international conference on computer and
knowledge engineering (ICCKE) (pp. 363-368). IEEE. *doi: 10.1109/ICCKE48569.2019.8964846*

[6]   Siar, M., & **Teshnehlab, M.** (2019, October). Age detection from brain MRI images using the deep
learning. In 2019 9th International Conference on Computer and Knowledge Engineering
(ICCKE) (pp. 369-374). IEEE. *doi: 10.1109/ICCKE48569.2019.8964911*

[7]   Sadr, H., Soleimandarabi, M. N., Pedram, M., & **Teshnelab, M.** (2019, April). Unified topicbased
semantic models: A study in computing the semantic relatedness of geographic terms. In 2019
5th International Conference on Web Research (ICWR) (pp. 134-140). IEEE. *doi:*
10.1109/ICWR.2019.8765257

[8]   Siar, H., & **Teshnehlab, M.** (2019, January). Diagnosing and classification tumors and MS
simultaneous of magnetic resonance images using convolution neural network. In 2019 7th
Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS) (pp. 1-4). IEEE. *doi:*
10.1109/CFIS.2019.8692148

[9]   Vafamand, A., Fatehi, A., Oliaee, S. E., & **Teshnehlab, M.** (2019, January). TS fuzzy identification
for mathematical modeling of HIV infection. In 2019 7th Iranian Joint Congress on Fuzzy and
Intelligent Systems (CFIS) (pp. 1-5). IEEE. *doi: 10.1109/CFIS.2019.8692164*

[10] Gozalpour, N., & **Teshnehlab, M.** (2019, January). Forecasting stock market price using deep
neural networks. In 2019 7th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS)
(pp. 1-4). IEEE. *doi: 10.1109/CFIS.2019.8692169*

[11] Tafti, B. E. F., Khanesar, M. A., & **Teshnehlab, M.** (2019, January). Nonlinear system identification
using type-2 fuzzy recurrent wavelet neural network. In 2019 7th Iranian Joint Congress on Fuzzy
and Intelligent Systems (CFIS) (pp. 1-4). IEEE. *doi: 10.1109/CFIS.2019.8692153*

[12] Noormohammadi-Asl, A., Saffari, M., & **Teshnehlab, M.** (2018, May). Neural control of mobile
robot motion based on feedback error learning and mimetic structure. In Electrical Engineering
(ICEE), Iranian Conference on (pp. 778-783). IEEE. *doi:*
10.1109/ICEE.2018.8472657

[13] Vartouni, A. M., Kashi, S. S., & **Teshnehlab, M.** (2018, February). An anomaly detection method
to detect web attacks using stacked auto-encoder. In 2018 6th Iranian Joint Congress on
Fuzzy and Intelligent Systems (CFIS) (pp. 131-134). IEEE. *doi: 10.1109/CFIS.2018.8336654*

[14] Jafarpisheh, N., Nafisi, N., & **Teshnehlab, M.** (2018). Breast cancer relapse prognosis by classic and modern structures of machine learning algorithms. In 2018 6th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS) (pp. 120-122). IEEE. *doi: 10.1109/CFIS.2018.8336649*

[15] Oliaee, S. M. E., Shoorehdeli, M. A., & **Teshnehlab, M.** (2018). Faults detecting of highdimension gas turbine by stacking DNN and LLM. In 2018 6th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS) (pp. 142-145). IEEE. *doi: 10.1109/CFIS.2018.8336657*

[16] Tahmasebi, S., Khanesar, M. A., & **Teshnehlab, M.** (2016, July). Adaptive direct fuzzy control of siso nonlinear systems using a fuzzy reference model. In 2016 3rd International Conference on Advances in Computational Tools for Engineering Applications (ACTEA) (pp. 93-98). IEEE. *doi: 10.1109/ACTEA.2016.7560119*

[17] Agand, P., Shoorehdeli, M. A., & **Teshnehlab, M.** (2016, May). Transparent and flexible neural network structure for robot dynamics identification. In 2016 24th Iranian Conference on Electrical Engineering (ICEE) (pp. 1700-1705). IEEE. *doi: 10.1109/IranianCEE.2016.7585795*

[18] Tahmasebi, S., Khanesar, M. A., & **Teshnehlab, M.** (2016, April). Fuzzy reference model for adaptive indirect takagi-sugeno model reference control. In 2016 IEEE 13th International Conference on Networking, Sensing, and Control (ICNSC) (pp. 1-6). IEEE. *doi: 10.1109/ICNSC.2016.7479009*

[19] Khodayar, M., & **Teshnehlab, M.** (2015, September). Robust deep neural network for wind speed prediction. In 2015 4th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS)
(pp. 1-5). IEEE. *doi: 10.1109/CFIS.2015.7391664*

[20] Saberian, F., Zamani, A., Gooya, M. M., Hemmati, P., Shoorehdeli, M. A., & **Teshnehlab, M.** (2014, May). Prediction of seasonal influenza epidemics in Tehran using artificial neural networks. In 2014 22nd Iranian Conference on Electrical Engineering (ICEE) (pp. 1921-1923). IEEE. *doi: 10.1109/IranianCEE.2014.6999855*

[21] Fallah, Z., Khanesar, M. A., & **Teshnehlab, M.** (2013, September). Hierarchical Fuzzy identification using gradient descent and recursive least square method. In 2013 3rd IEEE International Conference on Computer, Control and Communication (IC4) (pp. 1-5). IEEE. *doi: 10.1109/IC4.2013.6653750*

[22] Hosseinkhani, E., Setayeshi, S., & **Teshnehlab, M.** (2013, September). A novel approach for protein folding using ga feature selection and cellular lerning automata in sugarscape model.

In Proc. 2013 Int. Conf. on Biology, Medical Physics, medical Chemistry, Biochemistry and Biomedical Engineering (pp. 30-38).

[23] Azad, A. Z. K., Khanesar, M. A., & **Teshnehlab, M.** (2013, September). Type-2 Fuzzy neural networks for sliding mode fuzzy control of nonlinear dynamical systems with adaptive learning rate. In 2013 3rd IEEE International Conference on Computer, Control and Communication (IC4) (pp. 1-6). IEEE. *doi: 10.1109/IC4.2013.6653773*

[24] Sharafi, Y., Khanesar, M. A., & **Teshnehlab, M.** (2013, September). Discrete binary cat swarm optimization algorithm. In 2013 3rd IEEE international conference on computer, control and communication (IC4) (pp. 1-6). IEEE. *doi: 10.1109/IC4.2013.6653754*

[25] Rezaie, N., Khanesar, M. A., & **Teshnehlab, M.** (2013, September). Estimation of the parameters of wavelet neural networks using simultaneous use of genetic algorithm and recursive least square. In 2013 3rd IEEE International Conference on Computer, Control and Communication (IC4) (pp. 1-6). IEEE. *doi: 10.1109/IC4.2013.6653760*

[26] Gholami, M., Shoorehdeli, M. A., Dashti, Z. A. S., & **Teshnehlab, M.** (2013, August). Design of fuzzy parallel distributed compensation controller for magnetic levitation system. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-5). IEEE. *doi: 10.1109/IFSC.2013.6675671*

[27] Dashti, Z. A. S., Jafari, M., Gholami, M., Shoorehdeli, M. A., & **Teshnehlab, M.** (2013, August). Speed control of a digital servo system using parallel distributed compensation controller and neural adaptive controller. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-6). IEEE. *doi: 10.1109/IFSC.2013.6675670*

[28] Ghorbani, F., Shooredeli, M. A., & **Teshnehlab, M.** (2013, August). Fault tolerant improvement with chaos synchronization using fuzzy-PID control. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-5). IEEE. *doi: 10.1109/IFSC.2013.6675645*

[29] Spitmaan, M. M., & **Teshnehlab, M.** (2013, August). Cognitive learning in neural networks using fuzzy systems. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-5). IEEE. *doi: 10.1109/IFSC.2013.6675617*

[30] Moghaddam, J. D., Mosallanezhad, A., & **Teshnehlab, M.** (2013, August). Sunspot prediction by a time delay line recurrent fuzzy neural network using emotional learning. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-5). IEEE. *doi: 10.1109/IFSC.2013.6675625*

[31] Aminian, E., & **Teshnehlab, M.** (2013, August). A novel fuzzy particle swarm optimization. In 2013 13th Iranian Conference on Fuzzy Systems (IFSC) (pp. 1-6). IEEE. *doi: 10.1109/IFSC.2013.6675618*

[32] Dashti, Z. A. S., Shoorehdeli, M. A., Gholami, M., & **Teshnehlab, M.** (2013, June). Neural—adaptive control for electro hydraulic servo system. In 2013 9th Asian Control Conference (ASCC) (pp. 1-6). IEEE. *doi: 10.1109/ASCC.2013.6606217*

[33] Keyvanfard, F., Basij, M., & **Teshnehlab, M**. (2012, December). Adaptive neuro fuzzy system for breast cancer classification on magnetic resonance imaging. In AISP 2012.

[34] Shafiabady, N., & **Teshnehlab, M.** (2012). Some Applications of ST (Shafiabady-Teshnehlab) Evolutionary Optimization Algorithm. International Journal of Innovative Computing, Information and Control (IJICIC), 8(2).

[35] Azad, A. Z. K., Khanesar, M. A., & **Teshnehlab, M.** (2012, October). Training fuzzy neural networks using sliding mode theory with adaptive learning rate. In 2012 3rd International

Conference on System Science, Engineering Design and Manufacturing Informatization (Vol. 1, pp. 127-132). IEEE. *doi: 10.1109/ICSSEM.2012.6340783*

[36]   Ghiassirad, H., & **Teshnehlab, M.** (2012, September). Similarity measurement in convolutional space. In 2012 6th IEEE International Conference Intelligent Systems (pp. 250-255). IEEE. *doi: 10.1109/IS.2012.6335144*

[37]   Khanesar, M. A., Kaynak, O., & **Teshnehlab, M.** (2012, May). Statistical results to show the superiority of type two fuzzy logic systems over type one counterparts under noisy conditions. In 2012 IEEE International Symposium on Industrial Electronics (pp. 905-910). IEEE. *doi: 10.1109/ISIE.2012.6237209*

[38]   Falahiazar, L., **Teshnehlab, M.,** & Falahiazar, A. (2012, April). Parallel genetic algorithm based on a new migration strategy. In 2012 International Conference on Recent Advances in Computing and Software Systems (pp. 37-41). IEEE. *doi: 10.1109/RACSS.2012.6212694*

[39]   Nashalji, M. N., Razeghi, S. M., Shoorehdeli, M. A., & **Teshnehlab, M.** (2012). Fault detection in Tennessee Eastman process using fisher's discriminant analysis and principal component analysis modified by genetic algorithm. In Applied Mechanics and Materials (Vol. 110, pp. 4255-4262). Trans Tech Publications Ltd. *doi: 10.4028/www.scientific.net/AMM.110116.4255*

[40]   Havangi, R., Nekoui, M. A., Taghirad, H. D., & **Teshnehlab, M.** (2011, December). SLAM based on intelligent unscented Kalman filter. In The 2nd International Conference on Control, Instrumentation and Automation (pp. 877-882). IEEE. *doi: 10.1109/ICCIAutom.2011.6356777*

[41]   Nikpay, N., Shoorehdeli, M. A., & **Teshnehlab, M.** (2011, December). Neuro-fuzzy control of Quanser flexible link. In 2011 11th International Conference on Hybrid Intelligent Systems (HIS) (pp. 436-441). IEEE. *doi: 10.1109/HIS.2011.6122145*

[42]   Norouzi, M., Mansouri, M., **Teshnehlab, M.,** & Shoorehdeli, M. A. (2011, October). A novel type of trigonometric neural network trained by extended Kalman filter. In The Fourth International Workshop on Advanced Computational Intelligence (pp. 590-595). IEEE. *doi: 10.1109/IWACI.2011.6160077*

[43]   Saadatzi, M., Masouleh, M. T., Taghirad, H., Gosselin, C., & **Teshnehlab, M.** (2011). Multi-objective Scale Independent Optimization of 3-RPR Parallel Mechanisms. Proceedings of the IFToMM.

[44]   Emam, A., Tonekabonipour, H., & **Teshnelab, M.** (2011, October). Applying mlp as a predictor and ANFIS as a classifier in ischemia detection via ecg. In 2011 IEEE International Conference on Systems, Man, and Cybernetics (pp. 2958-2962). IEEE. *doi: 10.1109/ICSMC.2011.6084121*

[45]   Ahangar-Asr, H., Mansouri, **M., Teshnehlab**, M., & Pazoki, A. R. (2011, September). A hybrid strategy for the control of rotary inverted pendulum. In 2011 International Conference on Electrical and Control Engineering (pp. 5656-5659). IEEE. *doi: 10.1109/ICECENG.2011.6057971*

[46]   Nasrinpour, H. R., Malektaji, S., Aliyari Shoorehdeli, M., & **Teshnehlab, M.** (2011, September). Deploying fuzzy logic in a boxing game. In Proceedings of the 6th Annual International North-American Conference on AI and Simulation in Games (GameON-NA), Troy, NY, USA (pp. 28-30).

[47]   Orouskhani, M., Orouskhani, Y., & **Teshnehlab, M.** (2011). A new adaptive and dynamic strategy in cat swarm optimization. UKCI 2011, 49.

[48]   Tonekabonipour, H., Emam, A., **Teshnelab, M.,** & Shoorehdeli, M. A. (2011, July). Ischemia prediction via ECG using MLP and RBF predictors with ANFIS classifiers. In 2011 Seventh International Conference on Natural Computation (Vol. 2, pp. 776-780). IEEE. *doi: 10.1109/ICNC.2011.6022179*

[49]   Edalat, I., Abadeh, M. S., **Teshnehlab, M.,** & Nayyerirad, A. (2011, June). Fuzzy rule extraction using hybrid evolutionary models for data mining systems. In 2011 International

Symposium on Artificial Intelligence and Signal Processing (AISP) (pp. 25-30). IEEE. *doi: 10.1109/AISP.2011.5960977*

[50]   Keyvanfard, F., Shoorehdeli, M. A., & **Teshnehlab, M.** (2011, June). Feature selection and classification of breast MRI lesions based on Multi classifier. In 2011 International

Symposium on Artificial Intelligence and Signal Processing (AISP) (pp. 54-58). IEEE. *doi: 10.1109/AISP.2011.5960979*

[51]   Orouskhani, M., Mansouri, M., & **Teshnehlab, M.** (2011, June). Average-inertia weighted cat swarmoptimization. InInternationalconferenceinswarmintelligence(pp. 321-328). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-642-21515-5_38*

[52]   Khanesar, M. A., Kayacan, E., Kaynak, O., & **Teshnehlab, M.** (2011, May). An online training algorithm based on the fusion of sliding mode control theory and fuzzy neural networks with triangular membership functions. In 2011 8th Asian Control Conference (ASCC) (pp. 617622). IEEE.

[53]   Havangi, R., **Teshnehlab, M.,** Nekoui, M. A., & Taghirad, H. (2011, April). An adaptive neurofuzzy Rao-Blackwellized particle filter for SLAM. In 2011 IEEE International Conference on Mechatronics (pp. 487-492). IEEE. *doi: 10.1109/ICMECH.2011.5971335*

[54]   Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2011, April). Chaos synchronization for a class of chaotic systems with model uncertainty and external disturbances. In 2011 IEEE International Conference on Mechatronics (pp. 288-293). IEEE. *doi: 10.1109/ICMECH.2011.5971297*

[55]   Khanesar, M. A., Kayacan, E., **Teshnehlab, M.,** & Kaynak, O. (2011, April). Levenberg marquardt algorithm for the training of type-2 fuzzy neuro systems with a novel type-2 fuzzy membership function. In 2011 IEEE symposium on advances in type-2 fuzzy logic systems (T2FUZZ) (pp. 88-93). IEEE. *doi: 10.1109/T2FUZZ.2011.5949558*

[56]   Zaferani, E. J., & **Teshnehlab, M.** (2011). The parallel evaluation strategy approach to solving optimization problems. In International Conference on Computer and Software Modeling.

[57] Cigdem, O., Kayacan, E., Khanesar, M. A., Kaynak, O., & **Teshnehlab, M.** (2011, April). A novel training method based on variable structure systems theory for fuzzy neural networks. In Computational Intelligence in Control and Automation (CICA) (pp. 44-51). IEEE. *doi: 10.1109/CICA.2011.5945757*

[58] Havangi, R., Nekoui, M. A., Taghirad, H., & **Teshnehlab, M.** (2011, April). The H∞ FastSLAM framework. In 2011 IEEE International Conference on Mechatronics (pp. 481-486).

IEEE. *doi: 10.1109/ICMECH.2011.5971334*

[59] Moradi, Z., **Teshnehlab, M.**, & Rahmani, A. M. (2011, March). Implementation of neural networks for intrusion detection in MANET. In 2011 International Conference on Emerging Trends in Electrical and Computer Technology (pp. 1102-1106). IEEE. *doi: 10.1109/ICETECT.2011.5760283*

[60] Moradi, Z., & **Teshnehlab, M.** (2011). Intrusion detection model in MANETs using ANNs and ANFIS. In 2011 International Conference on Telecommunication Technology and Applications Proc. of CSIT (Vol. 5).

[61] Nematy, F., Rahmani, A. M., **Teshnelab, M.**, & Rahmani, N. (2010, November). Ant colony based node deployment and search in wireless sensor networks. In 2010 International Conference on Computational Intelligence and Communication Networks (pp. 363-366). IEEE. *doi: 10.1109/CICN.2010.138*

[62] Naghibi, S. S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2010, November). Breast cancer detection by using hierarchical fuzzy neural system with EKF trainer. In 2010 17th Iranian Conference of Biomedical Engineering (ICBME). *doi: 10.1109/ICBME.2010.5704983*

[63] Keivanfard, F., **Teshnehlab, M.**, Shoorehdeli, M. A., Nie, K., & Su, M. Y. (2010, November). Featureselectionandclassificationofbreastcancerondynamicmagneticresonanceimagingby using artificial neural networks. In 2010 17th Iranian Conference of Biomedical Engineering (ICBME) (pp. 1-4). IEEE. *doi: 10.1109/ICBME.2010.5704942*

[64] Khoshnoud, S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2010, November). Probabilistic neural network oriented classification methodology for ischemic beat detection using multi resolution wavelet analysis. In 2010 17th Iranian Conference of Biomedical Engineering (ICBME) (pp. 1-4). IEEE. *doi: 10.1109/ICBME.2010.5704915*

[65] Rashida, S. Y., **TeshnehLab, M.**, & Rahmani, A. M. (2010, October). An efficient negotiation based algorithm for resources advanced reservation using hill climbing in grid computing system. In 2010 First International Conference On Parallel, Distributed and Grid Computing (PDGC 2010) (pp. 71-77). IEEE. *doi: 10.1109/PDGC.2010.5679601*

[66] Emam, A., Tonekabonipour, H., **Teshnelab, M.**, & Shoorehdeli, M. A. (2010, October). Ischemia prediction using ANFIS. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 4041-4044). IEEE. *doi: 10.1109/ICSMC.2010.5642197*

[67] Khoshnoud, S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2010, October). Multiresoloution wavelet analysis based ischemic beat detection using fuzzy reasoning. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 2182-2185). IEEE. *doi: 10.1109/ICSMC.2010.5641679*

[68] Mola, M., Khanesar, M. A., & **Teshnehlab, M.** (2010, October). Subspace identification of dynamical neurofuzzy system using LOLIMOT. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 366-372). IEEE. *doi: 10.1109/ICSMC.2010.5641736*

[69] Khanesar, M. A., **Teshnehlab, M.**, & Kaynak, O. (2010, October). Identification of interval fuzzy models using recursive least square method. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 4362-4368). IEEE. *doi: 10.1109/ICSMC.2010.5641784*

[70] Aliyari, M., & **Teshnehlab, M.** (2010, October). A new approach in drug delivery control in anesthesia. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 2064-2068). IEEE. *doi: 10.1109/ICSMC.2010.5641714*

[71] Tonekabonipour, H., Emam, A., **Teshnelab, M.**, & Shoorehdeli, M. A. (2010, October). Comparison of neuro-fuzzy approaches with artificial neural networks for the detection of Ischemia in ECG signals. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 4045-4048). IEEE. *doi: 10.1109/ICSMC.2010.5642196*

[72] Nikpay, N., Shoorehdeli, M. A., & **Teshnehlab, M.** (2010, September). Adaptive intelligent control of flexible link robot arm. In IEEE 8th International Symposium on Intelligent Systems and Informatics (pp. 653-658). IEEE. *doi: 10.1109/SISY.2010.5647207*

[73] Havangi, R., Nekoui, M. A., & **Teshnehlab, M.** (2010, September). Adaptive neuro-fuzzy extended Kaiman filtering for robot localization. In Proceedings of 14th International Power Electronics and Motion Control Conference EPE-PEMC 2010 (pp. T5-130). IEEE. *doi: 10.1109/EPEPEMC.2010.5606833*

[74] Khanesar, M. A., **Teshnehlab, M.**, Kayacan, E., & Kaynak, O. (2010, September). A novel type-2 fuzzy membership function: Application to the prediction of noisy data. In 2010 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications (pp. 128-133). IEEE. *doi: 10.1109/CIMSA.2010.5611774*

[75] Taheri, A., Tavan, M., & **Teshnehlab, M.** (2010, May). Designing an adaptive neural network controller for TORA system by using feedback error learning. In 2010 Chinese Control and Decision Conference (pp. 2259-2264). IEEE. *doi: 10.1109/CCDC.2010.5498835*

[76] Khanmirzaei, Z., **Teshnehlab, M.**, & Sharifi, A. (2010, February). Modified honey bee optimization for recurrent neuro-fuzzy system model. In 2010 The 2nd international conference on computer and automation engineering (ICCAE) (Vol. 5, pp. 780-785). IEEE. *doi: 10.1109/ICCAE.2010.5451867*

[77] Khoshnoud, S., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2010, October). Multiresoloution wavelet analysis based ischemic beat detection using fuzzy reasoning. In 2010 IEEE International Conference on Systems, Man and Cybernetics (pp. 2182-2185). IEEE.

[78] Tavoli, R., Rahmani, A. M., & **Teshnehlab, M.** (2009, November). A new channel in reo with fuzzy method. In 2009 International Conference on Intelligent Networking and Collaborative Systems (pp. 141-146). IEEE. *doi: 10.1109/INCOS.2009.81*

[79] Zarei, M., Rahmani, A. M., Sasan, A., & **Teshnehlab, M.** (2009, November). Fuzzy based trust estimation for congestion control in wireless sensor networks. In 2009 International Conference on Intelligent Networking and Collaborative Systems (pp. 233-236). IEEE. *doi: 10.1109/INCOS.2009.16*

[80] Kiankhah, E., **Teshnelab, M.**, & Shoorehdeli, M. A. (2009, October). Feedback-error-learning for stability of double inverted pendulum. In 2009 IEEE International Conference on Systems, Man and Cybernetics (pp. 4496-4501). IEEE. *doi: 10.1109/ICSMC.2009.5346908*

[81] Marza, V., & **Teshnehlab, M.** (2009). Estimating development time and effort of software projects by using a Neuro_Fuzzy approach. In Advanced technologies. IntechOpen. *doi: 10.5772/8220*

[82] Arvani, A., **Teshnehlab, M.**, & Sh, M. A. (2009, October). Robust H∞ controller design for distillation column based on multi-objective optimization and genetic algorithms. In 2009 IEEE Symposium on Industrial Electronics and Applications (Vol. 2, pp. 773-777). IEEE. *doi: 10.1109/ISIEA.2009.5356359*

[83] Namazikhah, V., Shoorehdeli, M. A., & **Teshnehlab, M.** (2009, August). New control strategy of feedback error learning based on lead compensator for flexible link manipulator. In 2009 European Control Conference (ECC) (pp. 3329-3334). IEEE. *doi: 10.23919/ECC.2009.7074919*

[84] Hesari, V. A., SHoorehdeli, M. A., & **Teshnehlab, M.** (2009, August). Velocity control of EHSS by using Mamdani and ANFIS controllers. In 2009 European Control Conference (ECC) (pp. 3904-3909). IEEE. *doi: 10.23919/ECC.2009.7075009*

[85] Kousarrizi, M. R. N., Ghanbari, A. A., Gharaviri, A., **Teshnehlab, M.**, & Aliyari, M. (2009, June). Classification of alcoholics and non-alcoholics via EEG using SVM and neural networks. In 2009 3rd International Conference on Bioinformatics and Biomedical Engineering (pp. 1-4). IEEE. *doi: 10.1109/ICBBE.2009.5162504*

[86] Mohajeri, K., Zakizadeh, M., Moaveni, B., & **Teshnehlab, M.** (2009, August). Fuzzy CMAC structures. In 2009 IEEE International Conference on Fuzzy Systems (pp. 2126-2131). IEEE. *doi: 10.1109/FUZZY.2009.5277185*

[87] Daeinabi, K., & **Teshnehlab, M.** (2009, August). Principles of nano-robotics based on atomic force microscopy. In 2009 International Conference on Mechatronics and Automation (pp. 1589-1595). IEEE. *doi: 10.1109/ICMA.2009.5246064*

[88]   Kousarrizi, M. R. N., Ghanbari, A. A., **Teshnehlab, M.**, Shorehdeli, M. A., & Gharaviri, A. (2009, August). Feature extraction and classification of EEG signals using wavelet transform, SVM and artificial neural networks for brain computer interfaces. In 2009 international joint conference on bioinformatics, systems biology and intelligent computing (pp. 352-355). IEEE. *doi: 10.1109/IJCBS.2009.100*

[89]   Ghanbari, A. A., Kousarrizi, M. N., **Teshnehlab, M.**, & Aliyari, M. (2009, July). Wavelet and Hilbert transform-based brain computer interface. In 2009 International Conference on Advances in Computational Tools for Engineering Applications (pp. 438-442). IEEE. *doi: 10.1109/ACTEA.2009.5227850*

[90]   Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2009, July). Chaos synchronization of uncertain nonlinear gyros via hybrid control. In 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (pp. 1365-1370). IEEE. *doi: 10.1109/AIM.2009.5229879*

[91]   Shafiabady, N., **Teshnehlab, M.**, & Shooredeh, M. A. (2009, July). A comparison of PSO and GA combined with ls and rls in identification using fuzzy gaussian neural networks. In 2009 IEEE International Symposium on Industrial Electronics (pp. 2081-2086). IEEE. *doi: 10.1109/ISIE.2009.5217923*

[92]   Eshghi, N., Aliyari, M., & **Teshnehlab, M.** (2009, June). Anesthesia control based on intelligent controllers. In 2009 3rd International Conference on Bioinformatics and Biomedical Engineering (pp. 1-4). IEEE. *doi: 10.1109/ICBBE.2009.5162370*

[93]   Saiti, F., Naini, A. A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2009, June). Thyroid disease diagnosis based on genetic algorithms using PNN and SVM. In 2009 3rd International Conference on Bioinformatics and Biomedical Engineering (pp. 1-4). IEEE. *doi: 10.1109/ICBBE.2009.5163689*

[94]   Naini, A. A., Seiti, F., **Teshnelab, M.**, & Shoorehdeli, M. A. (2009, March). Face detection based on dimension reduction using probabilistic neural network and Genetic Algorithm. In 2009 6th International Symposium on Mechatronics and its Applications (pp. 1-4). IEEE. *doi: 10.1109/ISMA.2009.5164777*

[95]   Sadeghi, Z., & **Teshnehlab, M.** (2008, December). Ant colony clustering by expert ants. In 2008 11th International Conference on Computer and Information Technology (pp. 94-100). IEEE. *doi: 10.1109/ICCITECHN.2008.4803115*

[96]   Farivar, F., Shoorehdeli, M. A., Nekoui, M. A., & **Teshnehlab, M.** (2008, December). Sliding mode control of flexible joint using gaussian radial basis function neural networks. In 2008 International Conference on Computer and Electrical Engineering (pp. 856-860). IEEE. *doi: 10.1109/ICCEE.2008.131*

[97]   Haroonabadi, A., **Teshnehlab, M.**, & Movaghar, A. (2008, December). A novel method for modeling and evaluation of uncertain information systems. In 2008 International Conference on Information Technology (pp. 238-243). IEEE. *doi: 10.1109/ICIT.2008.24*

[98]   Yazdani, S., Shoorehdeli, M. A., & **Teshnehlab, M.** (2008, December). Identification of fuzzy models using cartesian genetic programming. In 2008 International Conference on Computational Intelligence and Security (Vol. 2, pp. 76-81). IEEE. *doi: 10.1109/CIS.2008.143*

[99]   Mohajeri, K., **Teshnehlab, M.**, Nekoui, M. A., & Moaveni, B. (2008, December). Predictive adaptive control of nonlinear multivariable systems using fuzzy CMAC. In 2008 International Conference on Computational Intelligence for Modelling Control and Automation (pp. 374379). IEEE. *doi: 10.1109/CIMCA.2008.36*

[100]   Aliasghary, M., Shoorehdeli, M. A., Jalilvand, A., & **Teshnehlab, M.** (2008, December). Magnetic levitation control based-on neural network and feedback error learning approach. In 2008 IEEE 2nd International Power and Energy Conference (pp. 1426-1430). IEEE. *doi: 10.1109/PECON.2008.4762702*

[101]   Sadeghi, Z., **Teshnehlab, M.**, & Pedram, M. M. (2008, October). K-ants clustering-a ew strategy based on ant clustering. In Scope of the Symposium (p. 45).

[102]   Sheikholharam, P., & **Teshnehlab, M.** (2008, October). Music composition using combination of genetic algorithms and kohonen grammar. In 2008 International Symposium on Computational Intelligence and Design (Vol. 1, pp. 255-260). IEEE. *doi: 10.1109/ISCID.2008.73*

[103]   Mansouri, M., Shoorehdeli, M. A., & **Teshnehlab, M.** (2008, October). Path planning of mobile robot using integer GA with considering terrain conditions. In 2008 IEEE international conference on systems, man and cybernetics (pp. 208-213). IEEE. *doi: 10.1109/ICSMC.2008.4811276*

[104]   Aliasghary, M., Jalilvand, A., **Teshnehlab, M.**, & Shoorehdeli, MA(2008, September). Sliding mode control of magnetic levitation system using radial basis function neural networks. In 2008 IEEE Conference on Robotics, Automation and Mechatronics (pp. 467-470). IEEE. *doi: 10.1109/RAMECH.2008.4681421*

[105]   Sadeghi, Z., & **Teshnehlab, M.** (2008, September). Ant based clustering using case based reasoning. In Proceedings of the 2nd conference on European computing conference (pp. 453-457). *doi: https://dl.acm.org/doi/abs/10.5555/1562423.1562501*

[106]   Sheikholharam, P., & **Teshnehlab, M.** (2008, September). Music composition using combination of genetic algorithms and recurrent neural networks. In 2008 Eighth International Conference on Hybrid Intelligent Systems (pp. 350-355). IEEE. *doi: 10.1109/HIS.2008.46*

[107]   Mansouri, M., Shoorehdeli, M. A., & **Teshnehlab, M.** (2008, September). Integer GA for mobile robot path planning with using another GA as repairing function. In 2008 IEEE International Conference on Automation and Logistics (pp. 135-140). IEEE. *doi: 10.1109/ICAL.2008.4636134*

[108]   Gharaviri, A., **Teshnehlab, M.**, & Moghaddam, H. A. (2008, August). Ischemia detection via ECG using ANFIS. In 2008 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (pp. 1163-1166). IEEE. *doi: 10.1109/IEMBS.2008.4649368*

[109] Moradkhani, A., Ahmadi, K., Mirmohammadhosseni, I., & Sh, M. A., **Teshnehlab, M.** (2008, August). Load cell design and construct with fault detection by probabilistic neural network. In 2008 IEEE International Conference on Mechatronics and Automation (pp. 55-60). IEEE. *doi: 10.1109/ICMA.2008.4798725*

[110] Sharifi, A., Vosolipour, A., & Sh, M. A., **Teshnehlab, M.** (2008, July). Hierarchical Takagi-Sugeno type fuzzy system for diabetes mellitus forecasting. In 2008 International Conference on Machine Learning and Cybernetics (Vol. 3, pp. 1265-1270). IEEE. *doi: 10.1109/ICMLC.2008.4620599*

[111] Gharaviri, A., Dehghan, F., **Teshnelab, M.**, & Moghaddam, H. A. (2008, July). Comparison of neural network, ANFIS, and SVM classifiers for PVC arrhythmia detection. In 2008 international conference on machine learning and cybernetics (Vol. 2, pp. 750-755). IEEE. *doi: 10.1109/ICMLC.2008.4620504*

[112] Sabahi, K., Sharifi, A., Aliyari Sh, M., **Teshnehlab, M.**, & Aliasghary, M. (2008). Load frequency control in interconnected power system using multi-objective PID controller. Journal of Applied Sciences, 8(20), 3676-3682. *doi: 10.1109/SMCIA.2008.5045963*

[113] Khanesar, M. A., & **Teshnehlab, M.** (2008, June). Direct stable adaptive fuzzy neural model reference control of a class of nonlinear systems. In 2008 3rd International Conference on Innovative Computing Information and Control (pp. 512-512). IEEE. *doi: 10.1109/ICICIC.2008.231*

[114] Hashemi, S. M., Razzazi, M., & **Teshnehlab, M.** (2008, April). Streamlining the global village grid through unifying e-governments, e-businesses, and e-commerce services. In 2008 3rd International Conference on Information and Communication Technologies: From Theory to Applications (pp. 1-4). IEEE. *doi: 10.1109/ICTTA.2008.4529917*

[115] Gharaviri, A., **Teshnehlab, M.**, & Moghaddam, H. A. (2008, April). Comparison of PVC arrhythmia detection via neural networks and ANFIS. In 2008 IEEE International Conference on Networking, Sensing and Control (pp. 1465-1470). IEEE. *doi: 10.1109/ICNSC.2008.4525451*

[116] **Teshnehlab, M.**, Shoorehdeli, M. A., & Sedigh, A. K. (2008, April). Novel hybrid learning algorithmsfortuningANFISparametersasanidentifierusingfuzzyPSO.In2008IEEEInternational Conference on Networking, Sensing and Control (pp. 111-116). IEEE. *doi: 10.1109/ICNSC.2008.4525193*

[117] Vosoulipour, A., **Teshnehlab, M.**, & Moghadam, H. A. (2008). Classification on diabetes mellitus data-set based-on artificial neural networks and ANFIS. In 4th Kuala Lumpur International Conference on Biomedical Engineering 2008 (pp. 27-30). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-540-69139-6_12*

[118] Rahmanian, M., Shoorehdeli, M. A., & **Teshnehlab, M.** (2007, December). The off-line and on-line fuzzy backstepping controllers for rotary inverted pendulum system. In 2007 International Conference on Computational Intelligence and Security (CIS 2007) (pp. 565-569). IEEE. *doi: 10.1109/CIS.2007.217*

[119] Chamaani, S., Mirtaheri, S. A., **Teshnehlab, M.**, & Shooredeli, M. A. (2007, December). Modified multi-objective particle swarm optimization for electromagnetic absorber design. In 2007 Asia-Pacific Conference on Applied Electromagnetics (pp. 1-5). IEEE. *doi: 10.1109/APACE.2007.4603923*

[120] Chamaani, S., Mirtaheri, S. A., **Teshnehlab, M.**, & Shooredeli, M. A. (2007, December). Modified multi-objective particle swarm optimization for electromagnetic absorber design. In 2007 Asia-Pacific Conference on Applied Electromagnetics (pp. 1-5). IEEE. *doi: 10.1109/APACE.2007.4603923*

[121] Ghomsheh, V. S., Shoorehdeli, M. A., Sharifi, A., & **Teshnehlab, M.** (2007, November). Multi objective optimization of ANFIS structure. In 2007 International Conference on Intelligent and Advanced Systems (pp. 249-253). IEEE. *doi: 10.1109/ICIAS.2007.4658384*

[122] Shafiabady, N., **Teshnehlab, M.**, & Shooredeli, M. A. (2007, November). Training matrix parameters by particle swarm optimization using a fuzzy neural network for identification. In 2007 International Conference on Intelligent and Advanced Systems (pp. 188-193). IEEE. *doi: 10.1109/ICIAS.2007.4658372*

[123] Mohseni, S. A., Shooredeli, M. A., & **Teshnehlab, M.** (2007, November). Decoupled sliding-mode with fuzzy neural network controller for EHSS velocity control. In 2007 International Conference on Intelligent and Advanced Systems (pp. 7-11). IEEE. *doi: 10.1109/ICIAS.2007.4658338*

[124] Tavakkoli, F., & **Teshnehlab, M.** (2007, November). A ball bearing fault diagnosis method based on wavelet and EMD energy entropy mean. In 2007 International Conference on Intelligent and Advanced Systems (pp. 1210-1212). IEEE. *doi: 10.1109/ICIAS.2007.4658576*

[125] Mirabedini, S. J., **Teshnehlab, M.**, & Rahmani, A. M. (2007, November). FLAR: An adaptive fuzzy routing algorithm for communications networks using mobile ants. In 2007 International Conference on Convergence Information Technology (ICCIT 2007) (pp. 1308-1315). IEEE. *doi: 10.1109/ICCIT.2007.26*

[126] Khanesar, M. A., **Teshnehlab, M.**, & Shoorehdeli, M. A. (2007, October). Fuzzy sliding mode control of rotary inverted pendulum. In 2007 IEEE International Conference on Computational Cybernetics (pp. 57-62). IEEE. *doi: 10.1109/ICCCYB.2007.4402019*

[127] Shoorehdeli, M. A., **Teshnehlab, M.**, & Shoorehdeli, H. A. (2007, October). Velocity control of an electro hydraulic servosystem. In 2007 IEEE International Conference on Systems, Man and Cybernetics (pp. 1536-1539). IEEE. *doi: 10.1109/ICSMC.2007.4413926*

[128] Ghomsheh, V. S., Khanehsar, M. A., & **Teshnehlab, M.** (2007, December). Improving the non-dominate sorting genetic algorithm for multi-objective optimization. In 2007 International Conference on Computational Intelligence and Security Workshops (CISW 2007) (pp. 89-92). IEEE. *doi: 10.1109/CISW.2007.4425453*

[129] Gharaviri, A., **Teshnehlab, M.,** & Moghaddam, H. A. (2007, September). PVC arrhythmia detection using neural networks. In 2007 5th International Symposium on Image and Signal Processing and Analysis (pp. 234-237). IEEE. *doi: 10.1109/ISPA.2007.4383696*

[130] Shoorehdeli, M. A., & **Teshnehlab, M.** (2007, August). Velocity control of an electro hydraulic servosystem by sliding mamdani. In First Joint Congress on Fuzzy and Intelligent Systems, Ferdowsi University of Mashhad, Iran, Tehran (Vol. 8).

[131] Abdi, J., **Teshnelab, M.,** & Lucas, C. (2007, August). BELBIC-based intelligent controller via temporal difference learning and context concept. In First Joint Congress on Fuzzy and Intelligent Systems (7th Iranian Conference on Fuzzy Systems and 8th Conference on Intelligent Systems), Ferdowsi University of Mashhad, Iran (pp. 349-349).

[132] Daeinabi, K., & **Teshnehlab, M.** (2007, August). Industrial arc welding robot defect tracking system in automotive industry. In 2007 International Conference on Mechatronics and Automation (pp. 3937-3941). IEEE. *doi: 10.1109/ICMA.2007.4304204*

[133] Khanesar, M. A., Shoorehdeli, M. A., & **Teshnehlab, M.** (2007, August). Hybrid training of recurrent fuzzy neural network model. In 2007 International Conference on Mechatronics and Automation (pp. 2598-2603). IEEE. *doi: 10.1109/ICMA.2007.4303966*

[134] Shoorehdeli, M. A., **Teshnehlab, M.,** & Sedigh, A. K. (2007, July). Novel hybrid learning algorithms for tuning ANFIS parameters using adaptive weighted PSO. In 2007 IEEE International Fuzzy Systems Conference (pp. 1-6). IEEE. *doi: 10.1109/FUZZY.2007.4295571*

[135] Sharifi, A., & **Teshnehlab, M.** (2007, June). Simultaneously structural learning and training of neurofuzzy GMDH using GA. In 2007 Mediterranean Conference on Control and Automation (pp. 1-5). IEEE. *doi: 10.1109/MED.2007.4433735*

[136] Khanesar, M. A., **Teshnehlab, M.,** & Shoorehdeli, M. A. (2007, June). Sliding mode control of rotary inverted pendulm. In 2007 Mediterranean Conference on Control and Automation (pp. 1-6). IEEE. *doi: 10.1109/MED.2007.4433653*

[137] Sabahi, K., Nekoui, M. A., **Teshnehlab, M.,** Aliyari, M., & Mansouri, M. (2007, June). Load frequency control in interconnected power system using modified dynamic neural networks. In 2007 Mediterranean Conference on Control and Automation (pp. 1-5). IEEE. *doi: 10.1109/MED.2007.4433651*

[138] Ghomsheh, V. S., Shoorehdeli, M. A., & **Teshnehlab, M.** (2007, June). Training ANFIS structure with modified PSO algorithm. In 2007 Mediterranean Conference on Control and Automation (pp. 1-6). IEEE. *doi: 10.1109/MED.2007.4433927*

[139] Khanesar, M. A., **Teshnehlab, M.,** & Shoorehdeli, M. A. (2007, June). A novel binary particle swarm optimization. In 2007 Mediterranean conference on control and automation (pp. 1-6). IEEE. *doi: 10.1109/MED.2007.4433821*

[140] Mohseni, S. A., & **Teshnehlab, M.** (2007, June). EHSS velocity control by fuzzy neural networks. In NAFIPS 2007-2007 Annual Meeting of the North American Fuzzy Information Processing Society (pp. 13-18). IEEE. *doi: 10.1109/NAFIPS.2007.383803*

[141] Fatehi, N., **Teshnehlab, M.,** & Shariati, S. (2007, June). Intelligent real time control of mobile robot based on image processing. In 2007 IEEE Intelligent Vehicles Symposium (pp. 410-415). IEEE. *doi: 10.1109/IVS.2007.4290149*

[142] Mohebbi, M., Moghadam, H. A., & **Teshnehlab, M.** (2007, June). An automated system for On-line monitoring and detection of ST changes in ECG signal. In 2007 IEEE 15th Signal Processing and Communications Applications (pp. 1-4). IEEE. *doi: 10.1109/SIU.2007.4298788*

[143] Mirabedini, S. J., & **Teshnehlab, M.** (2007, May). Performance evaluation of fuzzy ant based routing method for connectionless networks. In International Conference on Computational Science (pp. 960-965). Springer, Berlin, Heidelberg. *doi: 10.1007/978-3-540-72586-2_134*

[144] Ghassabeh, Y. A., Moghaddam, H. A., & **Teshnehlab, M.** (2007, May). Adaptive modified PCA for face recognition. In MVA (pp. 126-129).

[145] Ghassabeh, Y. A., Forghani, N., Forouzanfar, M., **Teshnehlab, M.** (2007, May). MRI fuzzy segmentation of brain tissue using IFCM algorithm with genetic algorithm optimization. In 2007 IEEE/ACS International Conference on Computer Systems and Applications (pp. 665668). IEEE. *doi: 10.1109/AICCSA.2007.370702*

[146] Hosseyndoost, F., & **Teshnehlab, M.** (2007, April). Improving hidden markov model performance in phoneme classification by fuzzy smoothing. In Proceedings of the 4th WSEAS International Conference on Electronic, Signal Processing and Control (pp. 1-4). *doi: https://dl.acm.org/doi/abs/10.5555/1366599.1366631*

[147] Navin, A. H., Fesharaki, M. N., **Teshnelab, M.,** & Shahamatnia, E. (2007). Fuzzy based problem-solution data structureas a data oriented model for ABS controlling. International Journal of Computer and Information Engineering, 1(12), 3793-3798.

[148] Navin, A. H., Sadighi, A., Fesharaki, M. N., Mirnia, M., **Teshnelab, M.,** & Keshmiri, R. (2007). Data oriented model of image: as a framework for image processing. International Journal of Computer and Information Engineering, 1(10), 2961-2964.

[149] Haroonabadi, A., & **Teshnehlab, M.** (2007). Applying fuzzy-UML for uncertain systems modeling. In Proceedings of the first joint congress on fuzzy and intelligent systems, Ferdowsi University of Mashhad, Iran.

[150] Adlgostar, R., Kouhi, Y., **Teshnehlab, M.,** & Aliyari, M. (2006, December). Flow control using a combination of robust and neurofuzzy controllers in feedback error learning framework. In 2006 IEEE International Conference on Industrial Technology (pp. 1771-1776). IEEE. *doi: 10.1109/ICIT.2006.372486*

[151] Shafiabady, N., **Teshnehlab, M.**, & Shooredeh, M. A. (2006, December). A comparison of PSO and backpropagation combined with ls and rls in identification using fuzzy neural networks. In 2006 IEEE International Conference on Industrial Technology (pp. 1574-1579). IEEE. *doi: 10.1109/ICIT.2006.372464*

[152] Sajadifar, S. M., & **Teshnehlab, M.** (2006, December). Structure optimization of locally linear model tree with merging and particle swarm optimization. In 2006 IEEE International Conference on Industrial Technology (pp. 1729-1734). IEEE. *doi: 10.1109/ICIT.2006.372466*

[153] Shoorehdeli, M. A., **Teshnehlab, M.**, & Sedigh, A. K. (2006, June). A novel training algorithm in ANFIS structure. In 2006 American Control Conference (pp. 6-pp). IEEE. *doi: 10.1109/ACC.2006.1657525*

[154] Hashemi, S. M., Razzazi, M., & **Teshnehlab, M.** (2006). Service oriented privacy modeling in enterprises with ISRUP e-service framework. In W3C Workshop on Languages for Privacy

Policy Negotiation and Semantics-Driven Enforcement, JRC, European Commission (Italy, 2006).

[155] Shoorehdeli, M. A., **Teshnehlab, M.**, & Shoorehdeli, H. A. (2007, October). Velocity control of an electro hydraulic servosystem. In 2007 IEEE International Conference on Systems, Man and Cybernetics (pp. 1536-1539). IEEE. *doi: 10.1109/ICNSC.2006.1673283*

[156] Shoorehdeli, M. A., **Teshnehlab, M.**, & Moghaddam, H. A. (2006, April). Feature subset selection for face detection using genetic algorithms and particle swarm optimization. In 2006 IEEE International Conference on Networking, Sensing and Control (pp. 686-690). IEEE. *doi: 10.1109/ICNSC.2006.1673229*

[157] Hashemi, S. M., Razzazi, M., & **Teshnehlab, M.** (2006). Leveraging the streamlined e-governmentOVERNMENTS, E-COMMERCE, AND EBUSINESSES SERVICES THROUGH ISRUP E-SERVICE FRAMEWORK. In IADIS International Conference e-Commerce 2006 (pp. 446-448).

[158] **Mohammad Teshnehlab** and Keigo Watanabe, Fuzzy Gaussian Potential Neural Networks Using a Functional Reasoning , Lecture Notes In Computer Science; Vol. 1011 archive, Selected papers from the IEEE/Nagoya-University World Wise persons, Workshop on Advances in Fuzzy Logic, Neural Networks and Genetic , pp.: 34 – 47 , 1994 , ISBN:3-540-60607-6, Publisher Springer-Verlag London, UK.

Invited Presentations (Selected)

M. Teshnehlab, Nonlinear system identification using type-2 fuzzy recurrent wavelet neural networks, Bojnurd, Iran, 2018

· **M. Teshnehlab**, Designing Fuzzy Control using GA Optimization, Nuero-Fuzzy Systems, University of Bam, Bam , Iran, 2017

¸ **M. Teshnehlab**, Designing Rough Neural Network, Iranian Fuzzy Systems Conference, University of Sistan and Baluchestan, Zahedan, Iran, 2015

[1] **M. Teshnehlab**, Rough neural network for early diagnosis of epilepsy, Iran Soft Computing Conference, University of Guilan, Rasht, Iran, 2013

° **M. Teshnehlab** et al, Evolutionary systems and Predictive Signal Processing, Seventh Conference on Intelligence Systems K. N. Toosi University of Technology, Tehran, Iran, 2005

Skills

Programming   MATLAB, Python

Language   Persian (native speaker), English (fluent speaker)

Academic Awards

Caro Lucas Award   IEEE Iran branch, 2020

Fuzzy Researcher of the year   Fuzzy Association of Iran, 2013

Researcher of the year   K. N. Toosi University, Tehran, Iran, 2004

Book of the year   K. N. Toosi University, Tehran, Iran, 1999

Scientific-Executive Activities

1999   **Founder of Intelligent Systems Laboratory (ISLab)**

2005-present   **Founding Member of Iran Intelligent Systems Association**

2013-present   **Member of the Board of Directors, Iran Intelligent Systems Association**

2013-2017   **President of Iran Intelligent Systems Association**

2014-2018   **Member of the Board of Directors, Iran Fuzzy Systems Association**

Organization of Conferences, Workshops and Mini-symposia

- The reviewer of 1st Iranian Joint Congress on Fuzzy and Intelligent Systems in Ferdowsi University of Mashhad, 2007.

- The reviewer of 2nd Joint Congress on Fuzzy and Intelligent Systems in Malek Ashtar University of Technology, 2008. item The reviewer of 4rd Joint Congress on Fuzzy and Intelligent Systems in Yazd university, 2009.

- Zangeneh, A. Z., Mansouri, **M., Teshnehlab**, M., & Sedigh, A. K. (2011, October). Training ANFIS system with DE algorithm. In The Fourth International Workshop on Advanced Computational Intelligence (pp. 308-314). IEEE. *doi: 10.1109/IWACI.2011.6160022*.

- **M. Teshnehlab**, Keynote Speaker on Rough neural networks, Shahid Bahonar University, Kerman, Iran, 2017

- The chairman of 2nd conference of intelligent systems in K. N. Toosi University, 2004.

- The secretary of 2nd conference of fuzzy systems in Sahand University, 2014.

- The secretary of 4th congress of fuzzy systems and intelligent in University of Sistan & Baluchestan, 2014.

- The secretary of 5th congress of fuzzy systems and intelligent in Qazvin Islamic Azad University, 2016.

- The secretary of 1st congress of intelligent computation in Ferdowsi University of Mashhad, 2020.

- The reviewer of 9th Iranian Joint Symposia on Fuzzy and Intelligent Systems in Bam University , 2022.

Editorial Advisory Board

2006 International Journal Information and Communication Technology Research (IJICTR), Tehran, Iran

2009 Scientific Journal of Computational Intelligence in Electrical Engineering, University of Isfahan

2011 Iranian Journal of Fuzzy Systems

Google Scholar

So far now: *h-index*=42   *i10-index*=160

https://scholar.google.com/citations?user=QFZMqoQAAAAJ

Graduate Students

PhD Students

[1]   **Dr. Seyyed Mohammad Emad Oliaee**, 2022
Thesis: Designing a new structure of automatic encoder of local models and its use in gas turbine fault detection and identification

[2]   **Dr. Soheil Mehralian**, 2022
Thesis: A new framework for deep metric learning using neural networks interoperation

[3]   **Dr. Effat Jalaeian Zaferani**, 2022
Thesis: Speech personality detection using neuro-fuzzy systems and deep neural networks

[4]   **Dr. Ali Moradi Vartouni**, 2021
Thesis: A deep learning approach for anomaly detection for web application firewalls

[5]   **Dr. Yousef Sharafi**, 2021
Thesis: A multi-objective optimization approach base on competitive algorithm with diversity preserving mechanism in pareto front

[6]   **Dr. Saeed PirMoradi**, 2020
Thesis: A new approach to designing the optimum structure of deep model on high dimension data

[7]   **Dr. Bibi Elham Fallah**, 2019
Thesis: Nonlinearsystemidentificationbasedonstableadaptiverecurrentfuzzyneuralnetwork

[8]   **Dr. Pourya Jafari**, 2017
Thesis: Design of adaptive fuzzy controllers based on fractional order adaptation laws for fractional-order systems

[9]   **Dr. Mohammad Mansoori**, 2015
Thesis: Designing stable adaptive hierarchical fuzzy controllers

[10] **Dr. Vahid Seydi Ghomshe**, 2014
Thesis: Multi-objective optimization to train neural networks and neuro-fuzzy systems

[11] **Dr. Ramezan Havangi**, 2012
Thesis: Improving particle filter based SLAM using soft computing and classical methods

[12] **Dr. Arash Sharifi**, 2012

Thesis: Overcoming the curse-of-dimensionality in fuzzy systems based on hierarchical structure and simultaneously training of the parameters of fuzzy system and feature extractionselection block

[13] **Dr. Mojataba Ahmadieh Khanesar**, 2011
Thesis: Design of interval fuzzy TS model reference controller for SISO nonlinear system based on lyapanov function

[14] **Dr. Faezeh Farivar**, 2011
Thesis: Intelligent nonlinear hybrid control and synchronization of chaotic systems with model uncertainty

[15] **Ali HarounAbadi**, 2008
Thesis: Designing an intelligent model using fuzzy object-oriented database for systems development

[16] **Dr. Mahdi Aliyari Shoorehdeli**, 2008
Thesis: Stability analysis of neuro-fuzzy networks based on combined training methods

[17] **Dr. Seyed Javad MirAbedini**, 2008
Thesis: A novel method of routing in modern communications networks using intelligent systems and ant colony algorithm

[18] **Dr. Amir Masoud Rahmani**, 2005
Thesis: An intelligent processor structure design

MSc Students

[1] **Seyed Rasoul Hosseini**, 2022
Thesis: Lane detection for smooth and uneven roads in autonomous vehicles using image processing and transfer learning with deep learning approach

[2] **Hamid Taheri**, 2022
Thesis: Continuous control of non-holonomic mobile robots navigation using deep reinforcement learning

[3] **Kavian Khanjani**, 2022
Thesis: Diagnosis of covid-19 disease using medical images and blood test dataset

[4] **Sina Ranjbar Kooh Farhadi**, 2022
Thesis: Intelligent advanced driver-assistance system (ADAS) based on convolutional neural networks for monitoring the driver's condition and the environment around the car

[5] **Mohammad Reza Hosseini Ganjaroodi**, 2021
Thesis: Image compression using deep learning methods

[6] **AmirSaeed Safari**, 2021
Thesis: Designing the neuro-fuzzy controller using deep learning based on feedback error learning (FEL) structure for multi-input multi-output quadrator system

[7]   **Mohammad Sadegh BanaZadeh**, 2021
Thesis: Designing a deep convolutional neural network in order to recognize people's facial expressions based on video images

[8]   **Nima Mohammad Zadeh Sabbaghi**, 2021
Thesis: Diagnosing diabetic retinopathy by classification of retinal images using hierarchical deep convolutional neural networks

[9]   **Mohammad Ali Labbaf Khaniki**, 2020
Thesis: Load Frequency Control using Intelligent Variable order FOPID Controller

[10]   **Sahar Ranjbar**, 2020
Thesis: Fuzzy type 2 adaptive control for synchronisation of nonlinear multiagent robotic systems

[11]   **Elham SadeghNezhad**, 2020
Thesis: Design and implementation of convolutional neural network to classify functional magnetic resonance images (FMRI)

[12]   **Mohammad Saeed Ebrahimi SaadAbadi**, 2020
Thesis: Human emotion recognition during daily activities using convolutional deep neural networls and classification based on brain emotional learning

[13]   **Haleh Fateh**, 2020
Thesis: Melanoma skin cancer recognition based on visual feature using deep learning

[14]   **Mehdi Ali Mohammadi**, 2019
Thesis: Modeling, identification and control of the outbreak of influenza epidemic disease

[15]   **Sina Ghods**, 2018
Thesis: Modeling and simulation of pain location diagnosis in feet according to reflexology

[16]   **Arezoo Vafavand**, 2018
Thesis: Design of a fuzzy model predictive control for HIV infection

[17]   **Nooshin JafarPisheh**, 2018
Thesis: Breastcancerprognosisandmetastasispredictionbynewgenerationofneuralnetworks

[18]   **Moahmmad Hossein Zardari**, 2018
Thesis: An intelligent controller for OLTC transformer considernig uncertainties in distributed generation in smart grids

[19]   **Mandana Ghaforian**, 2017
Thesis: Design of the intelligent model for prediction of epilepsy using EEG and ECG signals

[20]   **Mina Zeinali**, 2017
Thesis: Designing adaptive controller based on spiking neural networks

[21]   **Naeemeh Niazi**, 2017

Thesis: Classification of high-dimentional data using ensemble learning and type-2 fuzzy neural networks

[22]   **Fatemeh Taherian**, 2017

Thesis: Developing model of gate control theory using multi-input multi-output neural networks

[23]   **Mohammad Raeesi Esfarjani**, 2017

Thesis: Fault diagnosis of three-blades wind turbines via Takagi-Sugeno fuzzy model and evaluation by FAST simulator

[24]   **Mahmood Nazifi**, 2017

Thesis: Analysis and design of multi-input multi-output adaptive type-2 fuzzy controller for greenhouse temperature and humidity in the presence of uncertain environment

[25]   **Naghmeh Shafie Roodbari**, 2017

Thesis: Solar radiation prediction based on a robust hierachical architecture in deep neural networks

[26]   **Moahammad Reza VahedPoor**, 2017

Thesis: Air pollution prediction based on climate and traffic conditions and pollution parameters effects

[27]   **Marjan Jalilvand**, 2016

Thesis: Designing and simulation of adaptive type-II fuzzy controller based on feedback error learning for temperature control in public places

[28]   **Seyed Foad SeyedAbotorabi**, 2016

Thesis: Design and implementation of cascade deep neural network for forecasting weather time series

[29]   **Farzaneh Zarivar**, 2016

Thesis: Brain computer interface design based-on neural networks with non-deterministic activation functions

[30]   **Mostafa Kosari**, 2016

Thesis: Blood glucose regulation including uncertain using type 2 fuzzy-fractional order PID controller

[31]   **Nazereh Nourani**, 2015

Thesis: Design and simulation of rough neural controller with sliding mode in order to control type-1 diabetes

[32]   **Mehdi Khodayar**, 2015

Thesis: Designing and implementing of a neural structure resistant to disturbance and uncertainty in order to predict wind speed time series

[33]   **Sara Sehhat**, 2015

Thesis: Designing and implementation of rough recurrent neural network in order to predict meteorological parameters

[34]   **Sajjad Heidari**, 2015
Thesis: Identification and modeling of brain neural populations' behavior affected on decision making

[35]   **Neda MoradKhani**, 2015
Thesis: Identification of cement rotary kiln using type-2 fuzzy system

[36]   **Abbas Seyed ShahkaramFard**, 2015
Thesis: Epilepsy detection using EEG signal by rough MLP

[37]   **Mehran Moradi Espitman**, 2014
Thesis: Learning by spiked-timing-dependent plasticity on spiking neural networks for texture representation

[38]   **Alireza Mahdavi Balajadeh**, 2014
Thesis: Neuro-fuzzy sliding mode control of rotary inverted pendulum and its practical implementation

[39]   **Atefeh MirBagheri Tabatabaei**, 2014
Thesis: Active queue management (AQM) congestion control based on neuro fuzzy network in computer networks

[40]   **Alireza Arab**, 2014
Thesis: Designing intelligent slip detection and controlling of it on locomotive GT26cw

[41]   **Mehran Samari**, 2014
Thesis: Design and simulation of fuzzy neural controller to increase energy efficiency in public places

[42]   **Dariush Keramati**, 2014
Thesis: Design and implementation of neural networks with wavelet and chebychev activation functions for nonlinear systems identification

[43]   **Vahid Bahrami**, 2014
Thesis: Designing model reference type-2 hybrid fuzzy controller based on lyapunov function

[44]   **Sadegh Ansari**, 2014
Thesis: Dynamic neural network design for forcasting traffic flow

[45]   **Amir Fallah Tafti**, 2014
Thesis: Designing Image to sound mapping method to facilitate navigation for blind people

[46]   **Saeed Khan Kalanrati RoknAbad**, 2014
Thesis: The control strategy of self-regulated Expert Systems for ABS

[47]   **Mohsen Rafie Sangdani**, 2013
Thesis: Synchronization of flexible joint with chaotic systems and analyzing of chaos on performance of the controlled system

[48]   **MohammadAli Shahmirzadi**, 2013

Thesis: Design of sliding mode fuzzy type-2 controller and its implementation on flexible link manipulator

[49]   **Ardeshir MohammadZadeh**, 2013
Thesis: Type-2 Fuzzy Adaptive control for nonlinear systems

[50]   **Aria Barfar**, 2013
Thesis: The design and implementation of forgetfull intelligent agents in computer games

[51]   **Behnam Makhnaghi**, 2013
Thesis: Design and implementation of breast cancer diagnosis based on soft computing algorithms using MRI images

[52]   **Mahmood Norozi**, 2013
Thesis: Design and validation of two wheeled inverted pendulum robot indentifier

[53]   **Zhila Aghajaari**, 2013
Thesis: Design of an itegration of hetero associative memory with neural network, chaos theory and rough set

[54]   **Hadi Zare Jafari**, 2013
Thesis: Intelligent fault tolerant in formation control of cooperative mobile robot

[55]   **Behrooz Rostami**, 2013
Thesis: Malignant and benign brain tumor detection based on type-2 fuzzy systems

[56]   **Farhad Ghorbani**, 2013
Thesis: Stability analysis of fault tolerant control system designed based on chaotic anti-control of chaos for a rotary inverted pendulum

[57]   **Alireza Hajiani**, 2013
Thesis: Brain tumor segmentation in MRI images with cortex-like mechanism

[58]   **Sogand Majd**, 2012
Thesis: Designing a hybrid intelligent system using sobel method for edge detection in robot camera images

[59]   **Yaser Safari Siahkal**, 2012
Thesis: Design and implementation of magnetic levitation system

[60]   **Mohammad JavadPoor**, 2012
Thesis: Design and generate optimal fuzzy rules in intrusion detection

[61]   **Mehdi PoorAfzal**, 2012
Thesis: Design and implementation of adaptive sliding Neuro-Fuzzy controller for flexible link manipulators

[62]   **Hourieh KhalajZadeh**, 2012
Thesis: Design and implementation of convolutional neural network for identity recognition

[63]   **Morteza Hasani Saadi**, 2012

Thesis: Solving the SLAM problem with an intelligent method and implementing it on the khaperall mobile robot

[64]   **Fahimeh MirabZadeh**, 2012

Thesis: Noise removal of gene expression data and its application in cancer cell diagnosis using neural networks

[65]   **Reza Rasti Borojeni**, 2012

Thesis: diagnosis and classification of breast cancer based on convolution neural networks

[66]   **Melika Maleki**, 2012

Thesis: Diagnosis of MS based on artificial intelligence methods from classification of MRI

[67]   **Mostafa IranManesh Parizi**, 2012

Thesis: Presenting a model for predicting the relationship between air pollution and heart and respiratory diseases and methods to increase health by artificial neural network

[68]   **Effat Jalaeian Zaferani**, 2011

Thesis: Designing a communication interface between human and computer based on fuzzy systems

[69]   **Maryam Shokohi**, 2011

Thesis: Design and implementation of self organize flexible neural networks based on multi objective evalutionary optimization

[70]   **Maryam Moosavi**, 2011

Thesis: Designing and using computational intelligence classifiers to detect liver diseases

[71]   **Majid Ghaniei**, 2011

Thesis: Designing of fault tolerant control systems by applying parallel distributed fuzzy controller

[72]   **Hamid Reza Nasrin Poor**, 2011

Thesis: Designing an intelligenct boxing game based on fuzzy logic

[73]   **Elham KeshtGar**, 2011

Thesis: Analysis and simulation of robots optimum path planning based On multi-objective reinforcement learning algorithms

[74]   **Mohammad DanaeiFard**, 2011

Thesis: Analysis and simulation of transmission-line networks cloaking objects from electromagnetic fields

[75]   **Samira Abdi Daviran**, 2011

Thesis: Multi-objective optimization algorithm based on BBO combination with other evolutionary algorithms

[76]   **somayeh Naghibi**, 2010

Thesis: Designing and using neuro-fuzzy classifiers to detect breast cancer using sampling data

[77]   **Farzaneh Keyvanfard**, 2010
Thesis: classification of breast MRI images using neural networks and evolutionary processing

[78]   **Shiva Khoshnood**, 2010
Thesis: Diagnosis of myocardial ischemia using fuzzy classifier

[79]   **Hamed Labbad Ghasemi**, 2009
Thesis: Drug delivery control in anesthesia during operation

[80]   **Nasim Nikpey Soomesaraei**, 2009
Thesis: Control of quanser flexible link using neuro-fuzzy network

[81]   **Mohammad Reza Nazari Kosarrizi**, 2009
Thesis: Design of brain computer interface based on neural networks

[82]   **Samaneh Khakshoor**, 2009
Thesis: Identification and prediction of colon Cancer based on bayesian neural network

[83]   **Mostafa Norozi Nashlaji**, 2009
Thesis: Fault diagnosis of the tennessee eastman process using signal based dimensionality reduction techniqe combined with GA and classifier

[84]   **Ataollah Arvani**, 2008
Thesis: Multi-objective optimization in improving robust control of industrial processes

[85]   **Vahid Seydi Ghomshe**, 2008
Thesis: Jobs interaction theory to train hyper-parameters of the cultural optimization algorithm

[86]   **Yousef Sharafi**, 2008
Thesis: A discrete binary cat swarm optimization algorithm For global optimization problems

[87]   **Arash Sharifi**, 2008
Thesis: Multi-objective optimization based on particle swarm optimization (PSO)

[88]   **Moahmmad Mansori**, 2008
Thesis: Path planning and tracking control of mobile robot with intelligent algorithms

[89]   **Niusha Eshghi**, 2008
Thesis: Control of anesthesia via intelligent controller

[90]   **Asieh Vosoli Poor**, 2008
Thesis: Controlling diabetes mellitus using artificial neural network

[91]   **Ali Gharaviri**, 2008
Thesis: Coronary arteries disease detection via ECG using neural network

[92]   **Fatemeh Seiti**, 2008
Thesis: Throiddiseasediagnosisusingprobabilisticneuralnetworkandsupportvectormachine

[93]   **Kamel Sabahi Odlou**, 2007

Thesis: Comparison of frequency control in power systems based on dynamic neural networks and fuzzy recurrent neural networks

[94]   **Mojtaba Ahmadieh Khanesar**, 2007

Thesis: Designofintelligenceslidingmodecontrolleranditsimplementationonrotaryinverted pendulum

[95]   **Nosratollah Forghani**, 2007

Thesis: Diagnosis of thyroid gland diseases using neural-fuzzy network

[96]   **Maryam Shakiba**, 2007

Thesis: Prediction of router interval traffic rate using dynamic synapse neural network

[97]   **Maryam Mohebbi Ashtiani**, 2007

Thesis: An automated system for online monitoring and detection of ST changes in ECG signal

[98]   **Rahman Adl Gostar**, 2006

Thesis: Design and implementation of neuro-fuzzy controller in the training structure based on feedback error

[99]   **Samaneh Amini Khanghahi**, 2006

Thesis: Design and implementation of variable structure neuro-fuzzy controller based on sugeno model

[100]   **Hamidreza Borghaei**, 2006

Thesis: Short-term forecasting of rainfall in the southwestern region of the country using the neural network model of the cerebellum

[101]   **Alireza Mehrabi**, 2005

Thesis: Diagnosing cardiac arrhythmia based on the heart rate changes using intelligent neural methods

[102]   **Mohsen radmard**, 2004

Thesis: Solving LQR with output feedback problem using genetic algorithm and particle swarm optimization

[103]   **Ehsan Falsafi**, 2003

Thesis: Design and control of a bipedal robot using neural network controller

[104]   **Mohsen Saboori**, 2003

Thesis: Optimizing energy consumption using fuzzy controllers

[105]   **Ramezan Havangi**, 2002

Thesis: Combining GPS/INS and improving its performance with fuzzy adaptive kalman filter

[106]   **Davood Fakhr**, 2001

Thesis: Application of reccurent neuro-fuzzy network in predicting key meteorological parameters

[107] **Alireza Mohammad Zadeh**, 2001

Thesis: Application of reccurent neuro-fuzzy network in predicting key meteorological parameters

[108] **Nima Sarmadi**, 2001

Thesis: Prediction of meteorological parameters by reccurent neuro-fuzzy network with emotional training and combination of spatial information

[109] **Sanaz Imani Foladi**, 2001

Thesis: Prediction of minimum and maximum meteorological parameters vector with sugeno modification

[110] **Mohammad Taghi Shokohi**, 2001

Thesis: Investigation and simulation of fuzzy control algorithms in mobile phone power control

[111] **Hossein Reza Karam Pourian**, 2001

Thesis: Algorithm for fault detection and protection of power transformers based on adaptive neuro-fuzzy inference system (ANFIS)

[112] **Masoud Dehghani**, 2000

Thesis: Implementation of various neural network structures using DSP

[113] **Mehrdad Jebeli**, 1999

Thesis: Non-linear intelligent PID controller

[114] **Alireza Hasani**, 1999

Thesis: Prediction of air parameters using neuro-fuzzy networks

[115] **Gholamreza Nazari**, 1998

Thesis: Application of neuro-fuzzy networks in stabilizing power systems

[116] **Arash Daghighi**, 1997

Thesis: Design and construction of water temperature and level controller using neural networks

[117] **Mehdi Sanati**, 1997

Thesis: Designing high-performance controllers for rod and ball system based on recognition using two classic and intelligent tools

[118] **Dariush Afiuni**, 1997

Thesis: Prediction and control of traffic volume and density using intelligent systems

[119] **Majid Akhvan Zakeri**, 1997

Thesis: Weather forecasting using artificial neural networks

[120] **Mozafafr Ameri Bafeghi**, 1997

Thesis: Short-term load forecasting by neuro-fuzzy networks method

[121] **Majid Gholami**, 1996

Thesis: Pattern recognition using neural networks with subject of persian letters

Referee for Funding Agencies

1997-2001	**Iran Meteorological Organization**
2018-2020	**Ports and Maritime Organization**
2020-2021	**Masih Daneshvari Hospital**

Referee for Journals (Selected)

- IEEE Transactions on Fuzzy Systems
- IEEE Transactions on Industrial Electronics
- Journal of Control
- IEEE Access
- Applied Soft Computing
- Journal of AI and data mining
- International Journal of Systems Science
- Neural Computing and Applications
- IET Image Processing IET Generation, Transmission & Distribution

- Signal and Data Processing
- Sensors
- Wireless Personal Communications
- Journal of Intelligent & Fuzzy Systems
- Journal of medical systems
- International journal of Engineering
- Nonlinear Dynamics
- Chaos, Solitons & Fractals
- International Journal of Electrical & Computer Sciences
- Journal of Applied Sciences

Teaching Service

1995-present	**Neural Networks** master/doctorate course	
1995-present	**Neural Control** master/doctorate course	
2000-present	**Basics of Computational Intelligence** bachelor course	
2004-present	**Soft Computing** master/doctorate course	
2014-present	**Deep Learning** master/doctorate course	
1999-present	**Evolutionary Computing** master/doctorate course	
1999-present	**Control Fuzzy Systems** master/doctorate course	