Patricia Melin

List of Publications by Year
in descending order

623 papers	14,910 citations	12303 69 h-index	30010 103 g-index
722 all docs	722 docs citations	722 times ranked	6751 citing authors

#	Article	IF	Citations
1	Type-2 Fuzzy Logic: Theory and Applications. Studies in Fuzziness and Soft Computing, 2008, , .	0.6	344
2	Path planning for autonomous mobile robot navigation with ant colony optimization and fuzzy cost function evaluation. Applied Soft Computing Journal, 2009, 9, 1102-1110.	4.1	334
3	A review on the design and optimization of interval type-2 fuzzy controllers. Applied Soft Computing Journal, 2012, 12, 1267-1278.	4.1	306
4	A hybrid learning algorithm for a class of interval type-2 fuzzy neural networks. Information Sciences, 2009, 179, 2175-2193.	4.0	261
5	Optimal design of fuzzy classification systems using PSO with dynamic parameter adaptation through fuzzy logic. Expert Systems With Applications, 2013, 40, 3196-3206.	4.4	243
6	Comparative study of bio-inspired algorithms applied to the optimization of type-1 and type-2 fuzzy controllers for an autonomous mobile robot. Information Sciences, 2012, 192, 19-38.	4.0	234
7	A review on interval type-2 fuzzy logic applications in intelligent control. Information Sciences, 2014, 279, 615-631.	4.0	234
8	Experimental study of intelligent controllers under uncertainty using type-1 and type-2 fuzzy logic. Information Sciences, 2007, 177, 2023-2048.	4.0	226
9	Edge-Detection Method for Image Processing Based on Generalized Type-2 Fuzzy Logic. IEEE Transactions on Fuzzy Systems, 2014, 22, 1515-1525.	6.5	222
10	A review on type-2 fuzzy logic applications in clustering, classification and pattern recognition. Applied Soft Computing Journal, 2014, 21, 568-577.	4.1	216
11	An improved evolutionary method with fuzzy logic for combining Particle Swarm Optimization and Genetic Algorithms. Applied Soft Computing Journal, 2011, 11, 2625-2632.	4.1	196
12	A fuzzy hierarchical operator in the grey wolf optimizer algorithm. Applied Soft Computing Journal, 2017, 57, 315-328.	4.1	173
13	Hybrid intelligent systems for time series prediction using neural networks, fuzzy logic, and fractal theory. IEEE Transactions on Neural Networks, 2002, 13, 1395-1408.	4.8	164
14	A new approach for dynamic fuzzy logic parameter tuning in Ant Colony Optimization and its application in fuzzy control of a mobile robot. Applied Soft Computing Journal, 2015, 28, 150-159.	4.1	162
15	An improved sobel edge detection method based on generalized type-2 fuzzy logic. Soft Computing, 2016, 20, 773-784.	2.1	158
16	Optimization of type-2 fuzzy systems based on bio-inspired methods: A concise review. Information Sciences, 2012, 205, 1-19.	4.0	156
17	A new approach for time series prediction using ensembles of ANFIS models. Expert Systems With Applications, 2012, 39, 3494-3506.	4.4	156
18	Springer Handbook of Computational Intelligence. , 2015, , .		151

#	ARTICLE	IF	CITATIONS
19	Ant colony optimization with dynamic parameter adaptation based on interval type-2 fuzzy logic systems. Applied Soft Computing Journal, 2017, 53, 74-87.	4.1	145
20	An improved method for edge detection based on interval type-2 fuzzy logic. Expert Systems With Applications, 2010, 37, 8527-8535.	4.4	141
21	Optimization of modular granular neural networks using a firefly algorithm for human recognition. Engineering Applications of Artificial Intelligence, 2017, 64, 172-186.	4.3	139
22	Particle swarm optimization of interval type-2 fuzzy systems for FPGA applications. Applied Soft Computing Journal, 2013, 13, 496-508.	4.1	136
23	Optimization of interval type-2 fuzzy systems for image edge detection. Applied Soft Computing Journal, 2016, 47, 631-643.	4.1	136
24	Optimal design of type-2 and type-1 fuzzy tracking controllers for autonomous mobile robots under perturbed torques using a new chemical optimization paradigm. Expert Systems With Applications, 2013, 40, 3185-3195.	4.4	131
25	A review on the applications of type-2 fuzzy logic in classification and pattern recognition. Expert Systems With Applications, 2013, 40, 5413-5423.	4.4	129
26	Multiple Ensemble Neural Network Models with Fuzzy Response Aggregation for Predicting COVID-19 Time Series: The Case of Mexico. Healthcare (Switzerland), 2020, 8, 181.	1.0	128
27	Optimization of type-2 fuzzy weights in backpropagation learning for neural networks using GAs and PSO. Applied Soft Computing Journal, 2016, 38, 860-871.	4.1	125
28	High order α-planes integration: A new approach to computational cost reduction of General Type-2 Fuzzy Systems. Engineering Applications of Artificial Intelligence, 2018, 74, 186-197.	4.3	123
29	An optimization method for designing type-2 fuzzy inference systems based on the footprint of uncertainty using genetic algorithms. Expert Systems With Applications, 2012, 39, 4590-4598.	4.4	122
30	Interval type-2 fuzzy weight adjustment for backpropagation neural networks with application in time series prediction. Information Sciences, 2014, 260, 1-14.	4.0	122
31	Analysis of Spatial Spread Relationships of Coronavirus (COVID-19) Pandemic in the World using Self Organizing Maps. Chaos, Solitons and Fractals, 2020, 138, 109917.	2.5	120
32	A new approach for classifying coronavirus COVID-19 based on its manifestation on chest X-rays using texture features and neural networks. Information Sciences, 2021, 545, 403-414.	4.0	120
33	Face Recognition With an Improved Interval Type-2 Fuzzy Logic Sugeno Integral and Modular Neural Networks. IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, 2011, 41, 1001-1012.	3.4	118
34	Optimization of interval type-2 fuzzy logic controllers using evolutionary algorithms. Soft Computing, 2011, 15, 1145-1160.	2.1	117
35	A new neural network model based on the LVQ algorithm for multi-class classification of arrhythmias. Information Sciences, 2014, 279, 483-497.	4.0	115
36	Interval type-2 fuzzy logic for dynamic parameter adaptation in a modified gravitational search algorithm. Information Sciences, 2019, 476, 159-175.	4.0	115

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37	Dynamic parameter adaptation in particle swarm optimization using interval type-2 fuzzy logic. Soft Computing, 2016, 20, 1057-1070.	2.1	114
38	Hybrid Intelligent Systems for Pattern Recognition Using Soft Computing. Studies in Fuzziness and Soft Computing, 2005, , .	0.6	114
39	Fuzzy granular gravitational clustering algorithm for multivariate data. Information Sciences, 2014, 279, 498-511.	4.0	113
40	A survey on nature-inspired optimization algorithms with fuzzy logic for dynamic parameter adaptation. Expert Systems With Applications, 2014, 41, 6459-6466.	4.4	112
41	Particle swarm optimization of ensemble neural networks with fuzzy aggregation for time series prediction of the Mexican Stock Exchange. Information Sciences, 2014, 280, 188-204.	4.0	112
42	Multiple Objective Genetic Algorithms for Path-planning Optimization in Autonomous Mobile Robots. Soft Computing, 2006, 11, 269-279.	2.1	111
43	Genetic optimization of modular neural networks with fuzzy response integration for human recognition. Information Sciences, 2012, 197, 1-19.	4.0	110
44	Design of interval type-2 fuzzy models through optimal granularity allocation. Applied Soft Computing Journal, 2011, 11, 5590-5601.	4.1	107
45	An Interval Type-2 Fuzzy Logic Toolbox for Control Applications. IEEE International Conference on Fuzzy Systems, 2007, , .	0.0	99
46	Application of interval type-2 fuzzy neural networks in non-linear identification and time series prediction. Soft Computing, 2014, 18, 1213-1224.	2.1	99
47	An intelligent hybrid approach for industrial quality control combining neural networks, fuzzy logic and fractal theory. Information Sciences, 2007, 177, 1543-1557.	4.0	97
48	Forecasting of COVID-19 time series for countries in the world based on a hybrid approach combining the fractal dimension and fuzzy logic. Chaos, Solitons and Fractals, 2020, 140, 110242.	2.5	96
49	Adaptive intelligent control of aircraft systems with a hybrid approach combining neural networks, fuzzy logic and fractal theory. Applied Soft Computing Journal, 2003, 3, 353-362.	4.1	92
50	Simulation of the bird age-structured population growth based on an interval type-2 fuzzy cellular structure. Information Sciences, 2011, 181, 519-535.	4.0	92
51	Embedding a high speed interval type-2 fuzzy controller for a real plant into an FPGA. Applied Soft Computing Journal, 2012, 12, 988-998.	4.1	92
52	Hybrid intelligent system for cardiac arrhythmia classification with Fuzzy K-Nearest Neighbors and neural networks combined with a fuzzy system. Expert Systems With Applications, 2012, 39, 2947-2955.	4.4	92
53	A hybrid model based on modular neural networks and fuzzy systems for classification of blood pressure and hypertension risk diagnosis. Expert Systems With Applications, 2018, 107, 146-164.	4.4	90
54	Multi-objective optimization for modular granular neural networks applied to pattern recognition. Information Sciences, 2018, 460-461, 594-610.	4.0	89

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55	Intelligent control of complex electrochemical systems with a neuro-fuzzy-genetic approach. IEEE Transactions on Industrial Electronics, 2001, 48, 951-955.	5.2	88
56	Intelligent control of a stepping motor drive using a hybrid neuro-fuzzy ANFIS approach. Applied Soft Computing Journal, 2003, 3, 209-219.	4.1	86
57	Type-2 Fuzzy Logic: Theory and Applications. , 2007, , .		86
58	Type-1 and type-2 fuzzy inference systems as integration methods in modular neural networks for multimodal biometry and its optimization with genetic algorithms. Information Sciences, 2009, 179, 2123-2145.	4.0	85
59	Systematic design of a stable type-2 fuzzy logic controller. Applied Soft Computing Journal, 2008, 8, 1274-1279.	4.1	84
60	Interval type-2 fuzzy logic and modular neural networks for face recognition applications. Applied Soft Computing Journal, 2009, 9, 1377-1387.	4.1	84
61	Optimization of modular granular neural networks using hierarchical genetic algorithms for human recognition using the ear biometric measure. Engineering Applications of Artificial Intelligence, 2014, 27, 41-56.	4.3	84
62	A hybrid modular neural network architecture with fuzzy Sugeno integration for time series forecasting. Applied Soft Computing Journal, 2007, 7, 1217-1226.	4.1	82
63	Modular Neural Networks architecture optimization with a new nature inspired method using a fuzzy combination of Particle Swarm Optimization and Genetic Algorithms. Information Sciences, 2014, 270, 143-153.	4.0	82
64	Human evolutionary model: A new approach to optimization. Information Sciences, 2007, 177, 2075-2098.	4.0	81
65	Comparative study of interval Type-2 and general Type-2 fuzzy systems in medical diagnosis. Information Sciences, 2020, 525, 37-53.	4.0	79
66	Soft Computing for Control of Non-Linear Dynamical Systems. Studies in Fuzziness and Soft Computing, 2001, , .	0.6	78
67	A Grey Wolf Optimizer for Modular Granular Neural Networks for Human Recognition. Computational Intelligence and Neuroscience, 2017, 2017, 1-26.	1.1	78
68	Intelligent adaptive model-based control of robotic dynamic systems with a hybrid fuzzy-neural approach. Applied Soft Computing Journal, 2003, 3, 363-378.	4.1	77
69	A New Method for Adaptive Control of Non-Linear Plants Using Type-2 Fuzzy Logic and Neural Networks. International Journal of General Systems, 2004, 33, 289-304.	1.2	75
70	An Extension of the Fuzzy Possibilistic Clustering Algorithm Using Type-2 Fuzzy Logic Techniques. Advances in Fuzzy Systems, 2017, 2017, 1-23.	0.6	75
71	An Efficient Computational Method to Implement Type-2 Fuzzy Logic in Control Applications. , 2007, , 45-52.		74
72	A hybrid approach for image recognition combining type-2 fuzzy logic, modular neural networks and the Sugeno integral. Information Sciences, 2009, 179, 2078-2101.	4.0	74

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73	Intelligent control of a stepping motor drive using an adaptive neuro?fuzzy inference system. Information Sciences, 2005, 170, 133-151.	4.0	73
74	Evolutionary method combining particle swarm optimization and genetic algorithms using fuzzy logic for decision making. , 2009, , .		72
75	Comparative study of the use of fuzzy logic in improving particle swarm optimization variants for mathematical functions using co-evolution. Applied Soft Computing Journal, 2017, 52, 1070-1083.	4.1	72
76	A new gravitational search algorithm using fuzzy logic to parameter adaptation. , 2013, , .		71
77	Design of an interval Type-2 fuzzy model with justifiable uncertainty. Information Sciences, 2020, 513, 206-221.	4.0	68
78	Fuzzy Sets in Dynamic Adaptation of Parameters of a Bee Colony Optimization for Controlling the Trajectory of an Autonomous Mobile Robot. Sensors, 2016, 16, 1458.	2.1	64
79	New approach using ant colony optimization with ant set partition for fuzzy control design applied to the ball and beam system. Information Sciences, 2015, 294, 203-215.	4.0	63
80	Comparative analysis of noise robustness of type 2 fuzzy logic controllers. Kybernetika, 0, , 175-201.	0.0	63
81	Hybrid model based on neural networks, type-1 and type-2 fuzzy systems for 2-lead cardiac arrhythmia classification. Expert Systems With Applications, 2019, 126, 295-307.	4.4	60
82	Fuzzy logic in the gravitational search algorithm for the optimization of modular neural networks in pattern recognition. Expert Systems With Applications, 2015, 42, 5839-5847.	4.4	59
83	Fuzzy higher type information granules from an uncertainty measurement. Granular Computing, 2017, 2, 95-103.	4.4	59
84	A New Approach to Multiple Time Series Prediction Using MIMO Fuzzy Aggregation Models with Modular Neural Networks. International Journal of Fuzzy Systems, 2019, 21, 1629-1648.	2.3	59
85	Comparison of particle swarm optimization variants with fuzzy dynamic parameter adaptation for modular granular neural networks for human recognition. Journal of Intelligent and Fuzzy Systems, 2020, 38, 3229-3252.	0.8	59
86	A high-speed interval type 2 fuzzy system approach for dynamic parameter adaptation in metaheuristics. Engineering Applications of Artificial Intelligence, 2019, 85, 666-680.	4.3	58
87	New Methodology to Approximate Type-Reduction Based on a Continuous Root-Finding Karnik Mendel Algorithm. Algorithms, 2017, 10, 77.	1.2	57
88	A New Approach for Time Series Prediction Using Ensembles of IT2FNN Models with Optimization of Fuzzy Integrators. International Journal of Fuzzy Systems, 2018, 20, 701-728.	2.3	56
89	Soft Computing and Fractal Theory for Intelligent Manufacturing. Studies in Fuzziness and Soft Computing, 2003, , .	0.6	56
90	Generalized type-2 fuzzy weight adjustment for backpropagation neural networks in time series prediction. Information Sciences, 2015, 325, 159-174.	4.0	55

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91	Performance of a Simple Tuned Fuzzy Controller and a PID Controller on a DC Motor. , 2007, , .		53
92	A New Fuzzy Harmony Search Algorithm Using Fuzzy Logic for Dynamic Parameter Adaptation. Algorithms, 2016, 9, 69.	1.2	51
93	Time series prediction using ensembles of ANFIS models with genetic optimization of interval type-2 and type-1 fuzzy integrators. International Journal of Hybrid Intelligent Systems, 2014, 11, 211-226.	0.9	50
94	Optimization of modular granular neural networks using a hierarchical genetic algorithm based on the database complexity applied to human recognition. Information Sciences, 2015, 309, 73-101.	4.0	50
95	An approach for parameterized shadowed type-2 fuzzy membership functions applied in control applications. Soft Computing, 2019, 23, 3887-3901.	2.1	50
96	Interval type-2 fuzzy logic for edges detection in digital images. International Journal of Intelligent Systems, 2009, 24, 1115-1133.	3.3	45
97	Interval type-2 fuzzy logic for dynamic parameter adaptation in the bat algorithm. Soft Computing, 2017, 21, 667-685.	2.1	43
98	3 Type-2 Fuzzy Logic. Studies in Fuzziness and Soft Computing, 2007, , 29-43.	0.6	42
99	Building Fuzzy Inference Systems with a New Interval Type-2 Fuzzy Logic Toolbox. , 2008, , 104-114.		42
100	Hierarchical genetic algorithms for topology optimization in fuzzy control systems. International Journal of General Systems, 2007, 36, 575-591.	1.2	41
101	Building Fuzzy Inference Systems with the Interval Type-2 Fuzzy Logic Toolbox. , 2007, , 53-62.		40
102	A new modular neural network approach with fuzzy response integration for lung disease classification based on multiple objective feature optimization in chest X-ray images. Expert Systems With Applications, 2021, 168, 114361.	4.4	40
103	Optimization of Intelligent Controllers Using a Type-1 and Interval Type-2 Fuzzy Harmony Search Algorithm. Algorithms, 2017, 10, 82.	1.2	39
104	Optimal Genetic Design of Type-1 and Interval Type-2 Fuzzy Systems for Blood Pressure Level Classification. Axioms, 2019, 8, 8.	0.9	39
105	Shadowed Type-2 Fuzzy Systems for Dynamic Parameter Adaptation in Harmony Search and Differential Evolution Algorithms. Algorithms, 2019, 12, 17.	1.2	39
106	A Novel Method for a COVID-19 Classification of Countries Based on an Intelligent Fuzzy Fractal Approach. Healthcare (Switzerland), 2021, 9, 196.	1.0	38
107	A Hybrid Approach for Modular Neural Network Design Using Intercriteria Analysis and Intuitionistic Fuzzy Logic. Complexity, 2018, 2018, 1-11.	0.9	37
108	Optimal design of a general type-2 fuzzy classifier for the pulse level and its hardware implementation. Engineering Applications of Artificial Intelligence, 2021, 97, 104069.	4.3	37

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109	Optimal design of interval type 2 fuzzy controllers based on a simple tuning algorithm. Applied Soft Computing Journal, 2014, 23, 270-285.	4.1	36
110	Toward a development of general type-2 fuzzy classifiers applied in diagnosis problems through embedded type-1 fuzzy classifiers. Soft Computing, 2020, 24, 83-99.	2.1	35
111	Fuzzy logic in the gravitational search algorithm enhanced using fuzzy logic with dynamic alpha parameter value adaptation for the optimization of modular neural networks in echocardiogram recognition. Applied Soft Computing Journal, 2015, 37, 245-254.	4.1	34
112	Optimal Design of Interval Type-2 Fuzzy Heart Rate Level Classification Systems Using the Bird Swarm Algorithm. Algorithms, 2018, 11, 206.	1.2	34
113	General Type-2 Radial Basis Function Neural Network: A Data-Driven Fuzzy Model. IEEE Transactions on Fuzzy Systems, 2019, 27, 333-347.	6.5	34
114	A New Method for Edge Detection in Image Processing Using Interval Type-2 Fuzzy Logic. , 2007, , .		33
115	Ant colony test center for planning autonomous mobile robot navigation. Computer Applications in Engineering Education, 2013, 21, 214-229.	2.2	31
116	A multi-objective optimization of type-2 fuzzy control speed in FPGAs. Applied Soft Computing Journal, 2014, 24, 1164-1174.	4.1	30
117	A hybrid learning method composed by the orthogonal least-squares and the back-propagation learning algorithms for interval A2-C1 type-1 non-singleton type-2 TSK fuzzy logic systems. Soft Computing, 2015, 19, 661-678.	2.1	30
118	Fuzzy rule-based models with interactive rules and their granular generalization. Fuzzy Sets and Systems, 2017, 307, 1-28.	1.6	30
119	An Interval Type-2 Fuzzy Neural Network for Chaotic Time Series Prediction with Cross-Validation and Akaike Test. Studies in Computational Intelligence, 2010, , 269-285.	0.7	30
120	DEVELOPING A NEW METHOD FOR THE IDENTIFICATION OF MICROORGANISMS FOR THE FOOD INDUSTRY USING THE FRACTAL DIMENSION. Fractals, 1994, 02, 457-460.	1.8	29
121	Face recognition using modular neural networks and the fuzzy Sugeno integral for response integration. International Journal of Intelligent Systems, 2005, 20, 275-291.	3.3	29
122	Modular Neural Network with Fuzzy Integration and Its Optimization Using Genetic Algorithms for Human Recognition Based on Iris, Ear and Voice Biometrics. Studies in Computational Intelligence, 2010, , 85-102.	0.7	28
123	Edge Detection Method Based on General Type-2 Fuzzy Logic Applied to Color Images. Information (Switzerland), 2017, 8, 104.	1.7	28
124	A hybrid design of shadowed type-2 fuzzy inference systems applied in diagnosis problems. Engineering Applications of Artificial Intelligence, 2019, 86, 43-55.	4.3	28
125	A new approach for plant monitoring using type-2 fuzzy logic and fractal theory. International Journal of General Systems, 2004, 33, 305-319.	1.2	27
126	Type-2 Fuzzy Logic for Improving Training Data and Response Integration in Modular Neural Networks for Image Recognition. Lecture Notes in Computer Science, 2007, , 604-612.	1.0	26

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127	Design of an Optimized Fuzzy Classifier for the Diagnosis of Blood Pressure with a New Computational Method for Expert Rule Optimization. Algorithms, 2017, 10, 79.	1.2	26
128	Towards asymmetric uncertainty modeling in designing General Type-2 Fuzzy classifiers for medical diagnosis. Expert Systems With Applications, 2021, 183, 115370.	4.4	26
129	Modular Neural Networks and Type-2 Fuzzy Logic for Face Recognition. , 2007, , .		25
130	Modular Neural Networks and Type-2 Fuzzy Systems for Pattern Recognition. Studies in Computational Intelligence, 2012, , .	0.7	25
131	Bio-Inspired Algorithms and Its Applications for Optimization in Fuzzy Clustering. Algorithms, 2021, 14, 122.	1.2	25
132	Optimization using the firefly algorithm of ensemble neural networks with type-2 fuzzy integration for COVID-19 time series prediction. Soft Computing, 2023, 27, 3245-3282.	2.1	24
133	Recent Advances in Interval Type-2 Fuzzy Systems. SpringerBriefs in Applied Sciences and Technology, 2012, , .	0.2	23
134	Computational intelligence software for interval type‑2 fuzzy logic. Computer Applications in Engineering Education, 2013, 21, 737-747.	2.2	23
135	Parallel Particle Swarm Optimization with Parameters Adaptation Using Fuzzy Logic. Lecture Notes in Computer Science, 2013, , 374-385.	1.0	23
136	Quadrupedal Robot Locomotion: A Biologically Inspired Approach and Its Hardware Implementation. Computational Intelligence and Neuroscience, 2016, 2016, 1-13.	1.1	23
137	Fuzzy control of parameters to dynamically adapt the PSO and GA Algorithms. , 2010, , .		22
138	Cuckoo search algorithm for the optimization of type-2 fuzzy image edge detection systems. , 2015, , .		22
139	A New Hybridization Approach between the Fireworks Algorithm and Grey Wolf Optimizer Algorithm. Journal of Optimization, 2018, 2018, 1-18.	6.0	22
140	PSO with Dynamic Adaptation of Parameters for Optimization in Neural Networks with Interval Type-2 Fuzzy Numbers Weights. Axioms, 2019, 8, 14.	0.9	22
141	Type-1 and Type-2 Fuzzy Inference Systems as Integration Methods in Modular Neural Networks for Multimodal Biometry and Its Optimization with Genetic Algorithms. Studies in Computational Intelligence, 2008, , 89-114.	0.7	22
142	Interval Type-3 Fuzzy Systems: Theory and Design. Studies in Fuzziness and Soft Computing, 2022, , .	0.6	22
143	A new approach to control of multivariable systems through a hierarchical aggregation of fuzzy controllers. Granular Computing, 2019, 4, 1-13.	4.4	21
144	A New Biometric Recognition Technique Based on Hand Geometry and Voice Using Neural Networks and Fuzzy Logic. Studies in Computational Intelligence, 2008, , 171-186.	0.7	21

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145	The evolutionary learning rule for system identification. Applied Soft Computing Journal, 2003, 3, 343-352.	4.1	20
146	Genetic optimization of ensemble neural networks for complex time series prediction. , 2011, , .		20
147	Universal Approximation of a Class of Interval Type-2 Fuzzy Neural Networks in Nonlinear Identification. Advances in Fuzzy Systems, 2013, 2013, 1-16.	0.6	20
148	Bio-inspired Optimization Methods on Graphic Processing Unit for Minimization of Complex Mathematical Functions. Studies in Computational Intelligence, 2013, , 313-322.	0.7	20
149	Genetic Optimization of Neural Networks for Person Recognition based on the Iris. TELKOMNIKA Indonesian Journal of Electrical Engineering, 2012, 10, .	0.1	20
150	Parallel Evolutionary Computing using a cluster for Mathematical Function Optimization. , 2007, , .		19
151	Modular neural network integrator for human recognition from ear images. , 2010, , .		19
152	Fuzzy Fireworks Algorithm Based on a Sparks Dispersion Measure. Algorithms, 2017, 10, 83.	1.2	19
153	General Type-2 Fuzzy Sugeno Integral for Edge Detection. Journal of Imaging, 2019, 5, 71.	1.7	19
154	Blood Pressure Classification Using the Method of the Modular Neural Networks. International Journal of Hypertension, 2019, 2019, 1-13.	0.5	19
155	Interval type-3 fuzzy aggregators for ensembles of neural networks in COVID-19 time series prediction. Engineering Applications of Artificial Intelligence, 2022, 114, 105110.	4.3	19
156	Automated mathematical modelling, simulation and behavior identification of robotic dynamic systems using a new fuzzy-fractal-genetic approach. Robotics and Autonomous Systems, 1999, 28, 19-30.	3.0	18
157	Intelligent control of aircraft dynamic systems with a new hybrid neuro–fuzzy–fractal approach. Information Sciences, 2002, 142, 161-175.	4.0	18
158	Comparison of Hybrid Intelligent Systems, Neural Networks and Interval Type-2 Fuzzy Logic for Time Series Prediction. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	18
159	A New Method for Parameterization of General Type-2 Fuzzy Sets. Fuzzy Information and Engineering, 2018, 10, 31-57.	1.0	18
160	Optimization of type-1, interval type-2 and general type-2 fuzzy inference systems using a hierarchical genetic algorithm for modular granular neural networks. Granular Computing, 2019, 4, 211-236.	4.4	18
161	Hybrid Learning Algorithm for Interval Type-2 Fuzzy Neural Networks. , 2007, , .		17
162	Fuzzy Index to Evaluate Edge Detection in Digital Images. PLoS ONE, 2015, 10, e0131161.	1.1	17

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163	Introduction to an optimization algorithm based on the chemical reactions. Information Sciences, 2015, 291, 85-95.	4.0	17
164	Modular Neural Network Preprocessing Procedure with Intuitionistic Fuzzy InterCriteria Analysis Method. Advances in Intelligent Systems and Computing, 2016, , 175-186.	0.5	17
165	Intelligent control of a stepping motor drive using a hybrid neuro-fuzzy approach. Soft Computing, 2004, 8, 546-555.	2.1	16
166	Adaptive noise cancellation using type-2 fuzzy logic and neural networks. , 0, , .		16
167	A New Evolutionary Method with a Hybrid Approach Combining Particle Swarm Optimization and Genetic Algorithms using Fuzzy Logic for Decision Making. , 2008, , .		16
168	Type-2 Fuzzy Logic Systems. SpringerBriefs in Applied Sciences and Technology, 2012, , 7-12.	0.2	16
169	A Method for Response Integration in Modular Neural Networks with Type-2 Fuzzy Logic for Biometric Systems. , 2007, , 5-15.		16
170	Optimization of type-2 fuzzy logic controllers for mobile robots using evolutionary methods. , 2009, , .		15
171	Evolutionary method combining Particle Swarm Optimisation and Genetic Algorithms using fuzzy logic for parameter adaptation and aggregation: the case neural network optimisation for face recognition. International Journal of Artificial Intelligence and Soft Computing, 2010, 2, 77.	0.1	15
172	Parallel genetic algorithms for optimization of Modular Neural Networks in pattern recognition. , 2011, , .		15
173	Fuzzy FWA with dynamic adaptation of parameters. , 2016, , .		15
174	Method for Higher Order polynomial Sugeno Fuzzy Inference Systems. Information Sciences, 2016, 351, 76-89.	4.0	15
175	A survey of Type-2 fuzzy logic controller design using nature inspired optimization. Journal of Intelligent and Fuzzy Systems, 2020, 39, 6169-6179.	0.8	15
176	Spatial and Temporal Spread of the COVID-19 Pandemic Using Self Organizing Neural Networks and a Fuzzy Fractal Approach. Sustainability, 2021, 13, 8295.	1.6	15
177	A new fuzzy fractal control approach of non-linear dynamic systems: The case of controlling the COVID-19 pandemics. Chaos, Solitons and Fractals, 2021, 151, 111250.	2.5	15
178	A Hybrid Learning Algorithm for Interval Type-2 Fuzzy Neural Networks: The Case of Time Series Prediction. Studies in Computational Intelligence, 2008, , 363-386.	0.7	15
179	Interval Type-3 Fuzzy Aggregation of Neural Networks for Multiple Time Series Prediction: The Case of Financial Forecasting. Axioms, 2022, 11, 251.	0.9	15
180	Design of Stable Type-2 Fuzzy Logic Controllers based on a Fuzzy Lyapunov Approach. , 2006, , .		14

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181	Optimization with genetic algorithms of modular neural networks using interval type-2 fuzzy logic for response integration: The case of multimodal biometry. , 2008, , .		14
182	Optimization of Response Integration with Fuzzy Logic in Ensemble Neural Networks Using Genetic Algorithms. Studies in Computational Intelligence, 2008, , 129-150.	0.7	14
183	Parameter Optimization for Membership Functions of Type-2 Fuzzy Controllers for Autonomous Mobile Robots Using the Firefly Algorithm. Communications in Computer and Information Science, 2018, , 569-579.	0.4	14
184	A new fuzzy learning vector quantization method for classification problems based on a granular approach. Granular Computing, 2019, 4, 197-209.	4.4	14
185	Interval Type-3 Fuzzy Control for Automated Tuning of Image Quality in Televisions. Axioms, 2022, 11, 276.	0.9	14
186	A NEW METHOD FOR ADAPTIVE CONTROL OF NON-LINEAR PLANTS USING TYPE-2 FUZZY LOGIC AND NEURAL NETWORKS. , 2002, , .		13
187	17 Adaptive Noise Cancellation Using Type-2 Fuzzy Logic and Neural Networks. , 2007, , 213-223.		13
188	Optimization of a Fuzzy Tracking Controller for an Autonomous Mobile Robot under Perturbed Torques by Means of a Chemical Optimization Paradigm. Studies in Computational Intelligence, 2013, , 3-20.	0.7	13
189	An Efficient High-Order α-Plane Aggregation in General Type-2 Fuzzy Systems Using Newton–Cotes Rules. International Journal of Fuzzy Systems, 2021, 23, 1102-1121.	2.3	13
190	Edge Detection Methods Based on Generalized Type-2 Fuzzy Logic. SpringerBriefs in Applied Sciences and Technology, 2017, , .	0.2	13
191	Optimization of Type-2 Fuzzy Integration in Modular Neural Networks Using an Evolutionary Method with Applications in Multimodal Biometry. Lecture Notes in Computer Science, 2009, , 454-465.	1.0	13
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