Francisco Herrera

List of Publications by Year in descending order

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815 papers	89,419 citations	315 138 h-index	449 273 g-index
851 all docs	851 docs citations	851 times ranked	35451 citing authors

#	Article	IF	Citations
1	A practical tutorial on the use of nonparametric statistical tests as a methodology for comparing evolutionary and swarm intelligence algorithms. Swarm and Evolutionary Computation, 2011, 1, 3-18.	4.5	4,070
2	Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. Information Fusion, 2020, 58, 82-115.	11.7	3,332
3	A 2-tuple fuzzy linguistic representation model for computing with words. IEEE Transactions on Fuzzy Systems, 2000, 8, 746-752.	6.5	2,161
4	A Review on Ensembles for the Class Imbalance Problem: Bagging-, Boosting-, and Hybrid-Based Approaches. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2012, 42, 463-484.	3.3	1,955
5	Hesitant Fuzzy Linguistic Term Sets for Decision Making. IEEE Transactions on Fuzzy Systems, 2012, 20, 109-119.	6.5	1,926
6	Advanced nonparametric tests for multiple comparisons in the design of experiments in computational intelligence and data mining: Experimental analysis of power. Information Sciences, 2010, 180, 2044-2064.	4.0	1,627
7	Science mapping software tools: Review, analysis, and cooperative study among tools. Journal of the Association for Information Science and Technology, 2011, 62, 1382-1402.	2.6	1,536
8	A study on the use of non-parametric tests for analyzing the evolutionary algorithmsâ€™ behaviour: aÂcase study onÂtheÂCECâ€™2005 Special Session onÂReal Parameter Optimization. Journal of Heuristics, 2009, 15, 617-644.	1.1	1,454
9	Linguistic decision analysis: steps for solving decision problems under linguistic information. Fuzzy Sets and Systems, 2000, 115, 67-82.	1.6	1,342
10	An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. Journal of Informetrics, 2011, 5, 146-166.	1.4	1,226
11	KEEL: a software tool to assess evolutionary algorithms for data mining problems. Soft Computing, 2009, 13, 307-318.	2.1	1,165
12	An insight into classification with imbalanced data: Empirical results and current trends on using data intrinsic characteristics. Information Sciences, 2013, 250, 113-141.	4.0	1,158
13	A model of consensus in group decision making under linguistic assessments. Fuzzy Sets and Systems, 1996, 78, 73-87.	1.6	1,010
14	SMOTE for Learning from Imbalanced Data: Progress and Challenges, Marking the 15-year Anniversary. Journal of Artificial Intelligence Research, 0, 61, 863-905.	7.0	942
15	Tackling Real-Coded Genetic Algorithms: Operators and Tools for Behavioural Analysis. Artificial Intelligence Review, 1998, 12, 265-319.	9.7	905
16	Some issues on consistency of fuzzy preference relations. European Journal of Operational Research, 2004, 154, 98-109.	3.5	880
17	A model based on linguistic 2-tuples for dealing with multigranular hierarchical linguistic contexts in multi-expert decision-making. IEEE Transactions on Systems, Man, and Cybernetics, 2001, 31, 227-234.	5.5	767
18	A fusion approach for managing multi-granularity linguistic term sets in decision making. Fuzzy Sets and Systems, 2000, 114, 43-58.	1.6	716

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19	Ten years of genetic fuzzy systems: current framework and new trends. Fuzzy Sets and Systems, 2004, 141, 5-31.	1.6	705
20	<scp>SciMAT</scp>: A new science mapping analysis software tool. Journal of the Association for Information Science and Technology, 2012, 63, 1609-1630.	2.6	692
21	Integrating three representation models in fuzzy multipurpose decision making based on fuzzy preference relations. Fuzzy Sets and Systems, 1998, 97, 33-48.	1.6	689
22	A consensus model for multiperson decision making with different preference structures. IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, 2002, 32, 394-402.	3.4	627
23	h-Index: A review focused in its variants, computation and standardization for different scientific fields. Journal of Informetrics, 2009, 3, 273-289.	1.4	625
24	Direct approach processes in group decision making using linguistic OWA operators. Fuzzy Sets and Systems, 1996, 79, 175-190.	1.6	612
25	Prototype Selection for Nearest Neighbor Classification: Taxonomy and Empirical Study. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2012, 34, 417-435.	9.7	611
26	An overview of ensemble methods for binary classifiers in multi-class problems: Experimental study on one-vs-one and one-vs-all schemes. Pattern Recognition, 2011, 44, 1761-1776.	5.1	599
27	A Consensus Model for Group Decision Making With Incomplete Fuzzy Preference Relations. IEEE Transactions on Fuzzy Systems, 2007, 15, 863-877.	6.5	574
28	Managing non-homogeneous information in group decision making. European Journal of Operational Research, 2005, 166, 115-132.	3.5	569
29	A study of statistical techniques and performance measures for genetics-based machine learning: accuracy and interpretability. Soft Computing, 2009, 13, 959-977.	2.1	563
30	Data Preprocessing in Data Mining. Intelligent Systems Reference Library, 2015, , .	1.0	541
31	A sequential selection process in group decision making with a linguistic assessment approach. Information Sciences, 1995, 85, 223-239.	4.0	538
32	A unifying view on dataset shift in classification. Pattern Recognition, 2012, 45, 521-530.	5.1	525
33	Group Decision-Making Model With Incomplete Fuzzy Preference Relations Based on Additive Consistency. IEEE Transactions on Systems, Man, and Cybernetics, 2007, 37, 176-189.	5.5	515
34	Genetic fuzzy systems: taxonomy, current research trends and prospects. Evolutionary Intelligence, 2008, 1, 27-46.	2.3	509
35	A review of microarray datasets and applied feature selection methods. Information Sciences, 2014, 282, 111-135.	4.0	507
36	A Fuzzy Linguistic Methodology to Deal With Unbalanced Linguistic Term Sets. IEEE Transactions on Fuzzy Systems, 2008, 16, 354-370.	6.5	494

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37	Learning from Imbalanced Data Sets. , 2018, , .		477
38	Integrating multiplicative preference relations in a multipurpose decision-making model based on fuzzy preference relations. Fuzzy Sets and Systems, 2001, 122, 277-291.	1.6	471
39	A group decision making model dealing with comparative linguistic expressions based on hesitant fuzzy linguistic term sets. Information Sciences, 2013, 241, 28-42.	4.0	466
40	A Survey on the Application of Genetic Programming to Classification. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2010, 40, 121-144.	3.3	435
41	Bio-inspired computation: Where we stand and what's next. Swarm and Evolutionary Computation, 2019, 48, 220-250.	4.5	430
42	Interpretability of linguistic fuzzy rule-based systems: An overview of interpretability measures. Information Sciences, 2011, 181, 4340-4360.	4.0	428
43	Computing with words in decision making: foundations, trends and prospects. Fuzzy Optimization and Decision Making, 2009, 8, 337-364.	3.4	426
44	An overview on the 2-tuple linguistic model for computing with words in decision making: Extensions, applications and challenges. Information Sciences, 2012, 207, 1-18.	4.0	424
45	Multiperson decision-making based on multiplicative preference relations. European Journal of Operational Research, 2001, 129, 372-385.	3.5	416
46	A Consensus Model to Detect and Manage Noncooperative Behaviors in Large-Scale Group Decision Making. IEEE Transactions on Fuzzy Systems, 2014, 22, 516-530.	6.5	413
47	SMOTEâ€"IPF: Addressing the noisy and borderline examples problem in imbalanced classification by a re-sampling method with filtering. Information Sciences, 2015, 291, 184-203.	4.0	413
48	AN APPROACH FOR COMBINING LINGUISTIC AND NUMERICAL INFORMATION BASED ON THE 2-TUPLE FUZZY LINGUISTIC REPRESENTATION MODEL IN DECISION-MAKING. International Journal of Uncertainty, Fuzziness and Knowlege-Based Systems, 2000, 08, 539-562.	0.9	399
49	Deep learning in video multi-object tracking: A survey. Neurocomputing, 2020, 381, 61-88.	3.5	394
50	Hesitant Fuzzy Sets: State of the Art and Future Directions. International Journal of Intelligent Systems, 2014, 29, 495-524.	3.3	390
51	A Survey of Discretization Techniques: Taxonomy and Empirical Analysis in Supervised Learning. IEEE Transactions on Knowledge and Data Engineering, 2013, 25, 734-750.	4.0	389
52	A Historical Account of Types of Fuzzy Sets and Their Relationships. IEEE Transactions on Fuzzy Systems, 2016, 24, 179-194.	6.5	384
53	Cardinal Consistency of Reciprocal Preference Relations: A Characterization of Multiplicative Transitivity. IEEE Transactions on Fuzzy Systems, 2009, 17, 14-23.	6.5	383
54	Self-labeled techniques for semi-supervised learning: taxonomy, software and empirical study. Knowledge and Information Systems, 2015, 42, 245-284.	2.1	377

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55	Aggregation operators for linguistic weighted information. IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, 1997, 27, 646-656.	3.4	353
56	SMOTE-RSB *: a hybrid preprocessing approach based on oversampling and undersampling for high imbalanced data-sets using SMOTE and rough sets theory. Knowledge and Information Systems, 2012, 33, 245-265.	2.1	342
57	A proposal on reasoning methods in fuzzy rule-based classification systems. International Journal of Approximate Reasoning, 1999, 20, 21-45.	1.9	336
58	A rational consensus model in group decision making using linguistic assessments. Fuzzy Sets and Systems, 1997, 88, 31-49.	1.6	329
59	A survey on data preprocessing for data stream mining: Current status and future directions. Neurocomputing, 2017, 239, 39-57.	3.5	326
60	A Review of the Application of Multiobjective Evolutionary Fuzzy Systems: Current Status and Further Directions. IEEE Transactions on Fuzzy Systems, 2013, 21, 45-65.	6.5	321
61	Big data preprocessing: methods and prospects. Big Data Analytics, 2016, 1, .	2.2	319
62	Some induced ordered weighted averaging operators and their use for solving group decision-making problems based on fuzzy preference relations. European Journal of Operational Research, 2007, 182, 383-399.	3.5	318
63	EUSBoost: Enhancing ensembles for highly imbalanced data-sets by evolutionary undersampling. Pattern Recognition, 2013, 46, 3460-3471.	5.1	317
64	Recent trends in the use of statistical tests for comparing swarm and evolutionary computing algorithms: Practical guidelines and a critical review. Swarm and Evolutionary Computation, 2020, 54, 100665.	4.5	317
65	Choice functions and mechanisms for linguistic preference relations. European Journal of Operational Research, 2000, 120, 144-161.	3.5	316
66	Evolutionary Undersampling for Classification with Imbalanced Datasets: Proposals and Taxonomy. Evolutionary Computation, 2009, 17, 275-306.	2.3	312
67	Personalized individual semantics in computing with words for supporting linguistic group decision making. An application on consensus reaching. Information Fusion, 2017, 33, 29-40.	11.7	310
68	A taxonomy for the crossover operator for real-coded genetic algorithms: An experimental study. International Journal of Intelligent Systems, 2003, 18, 309-338.	3.3	301
69	Tuning fuzzy logic controllers by genetic algorithms. International Journal of Approximate Reasoning, 1995, 12, 299-315.	1.9	299
70	Global and local real-coded genetic algorithms based on parent-centric crossover operators. European Journal of Operational Research, 2008, 185, 1088-1113.	3.5	288
71	Analysing the classification of imbalanced data-sets with multiple classes: Binarization techniques and ad-hoc approaches. Knowledge-Based Systems, 2013, 42, 97-110.	4.0	286
72	Combining numerical and linguistic information in group decision making. Information Sciences, 1998, 107, 177-194.	4.0	285

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73	Real-Coded Memetic Algorithms with Crossover Hill-Climbing. Evolutionary Computation, 2004, 12, 273-302.	2.3	285
74	Probabilistic Linguistic MULTIMOORA: A Multicriteria Decision Making Method Based on the Probabilistic Linguistic Expectation Function and the Improved Borda Rule. IEEE Transactions on Fuzzy Systems, 2018, 26, 3688-3702.	6.5	283
75	Managing consensus based on leadership in opinion dynamics. Information Sciences, 2017, 397-398, 187-205.	4.0	280
76	Using evolutionary algorithms as instance selection for data reduction in KDD: an experimental study. IEEE Transactions on Evolutionary Computation, 2003, 7, 561-575.	7.5	275
77	A web based consensus support system for group decision making problems and incomplete preferences. Information Sciences, 2010, 180, 4477-4495.	4.0	275
78	A Fuzzy Association Rule-Based Classification Model for High-Dimensional Problems With Genetic Rule Selection and Lateral Tuning. IEEE Transactions on Fuzzy Systems, 2011, 19, 857-872.	6.5	274
79	Double hierarchy hesitant fuzzy linguistic term set and MULTIMOORA method: A case of study to evaluate the implementation status of haze controlling measures. Information Fusion, 2017, 38, 22-34.	11.7	270
80	A taxonomy and an empirical analysis of multiple objective ant colony optimization algorithms for the bi-criteria TSP. European Journal of Operational Research, 2007, 180, 116-148.	3.5	254
81	Consensus under a fuzzy context: Taxonomy, analysis framework AFRYCA and experimental case of study. Information Fusion, 2014, 20, 252-271.	11.7	254
82	Generating the knowledge base of a fuzzy rule-based system by the genetic learning of the data base. IEEE Transactions on Fuzzy Systems, 2001, 9, 667-674.	6.5	251
83	A consistency-based procedure to estimate missing pairwise preference values. International Journal of Intelligent Systems, 2008, 23, 155-175.	3.3	251
84	A study of the behaviour of linguistic fuzzy rule based classification systems in the framework of imbalanced data-sets. Fuzzy Sets and Systems, 2008, 159, 2378-2398.	1.6	250
85	Group decision making with incomplete fuzzy linguistic preference relations. International Journal of Intelligent Systems, 2009, 24, 201-222.	3.3	248
86	Analysis of preprocessing vs. cost-sensitive learning for imbalanced classification. Open problems on intrinsic data characteristics. Expert Systems With Applications, 2012, 39, 6585-6608.	4.4	248
87	Study on the Impact of Partition-Induced Dataset Shift on <formula formulatype="inline"><tex Notation="TeX">k</tex></formula>-Fold Cross-Validation. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 1304-1312.	7.2	243
88	Large-scale group decision making model based on social network analysis: Trust relationship-based conflict detection and elimination. European Journal of Operational Research, 2019, 275, 737-754.	3.5	243
89	Grouping, Overlap, and Generalized Bientropic Functions for Fuzzy Modeling of Pairwise Comparisons. IEEE Transactions on Fuzzy Systems, 2012, 20, 405-415.	6.5	241
90	Computing with Words in Decision support Systems: An overview on Models and Applications. International Journal of Computational Intelligence Systems, 2010, 3, 382-395.	1.6	240

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91	On the use of MapReduce for imbalanced big data using Random Forest. Information Sciences, 2014, 285, 112-137.	4.0	236
92	An overview on subgroup discovery: foundations and applications. Knowledge and Information Systems, 2011, 29, 495-525.	2.1	229
93	Gradual distributed real-coded genetic algorithms. IEEE Transactions on Evolutionary Computation, 2000, 4, 43-63.	7.5	228
94	A Consensus Model for Large-Scale Linguistic Group Decision Making With a Feedback Recommendation Based on Clustered Personalized Individual Semantics and Opposing Consensus Groups. IEEE Transactions on Fuzzy Systems, 2019, 27, 221-233.	6.5	227
95	THE 2-TUPLE LINGUISTIC COMPUTATIONAL MODEL: ADVANTAGES OF ITS LINGUISTIC DESCRIPTION, ACCURACY AND CONSISTENCY. International Journal of Uncertainty, Fuzziness and Knowlege-Based Systems, 2001, 09, 33-48.	0.9	224
96	Cost-sensitive linguistic fuzzy rule based classification systems under the MapReduce framework for imbalanced big data. Fuzzy Sets and Systems, 2015, 258, 5-38.	1.6	223
97	A practical tutorial on bagging and boosting based ensembles for machine learning: Algorithms, software tools, performance study, practical perspectives and opportunities. Information Fusion, 2020, 64, 205-237.	11.7	223
98	An overview on feedback mechanisms with minimum adjustment or cost in consensus reaching in group decision making: Research paradigms and challenges. Information Fusion, 2020, 60, 65-79.	11.7	219
99	kNN-IS: An Iterative Spark-based design of the k-Nearest Neighbors classifier for big data. Knowledge-Based Systems, 2017, 117, 3-15.	4.0	216
100	A Taxonomy and Experimental Study on Prototype Generation for Nearest Neighbor Classification. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2012, 42, 86-100.	3.3	215
101	A practical tutorial on autoencoders for nonlinear feature fusion: Taxonomy, models, software and guidelines. Information Fusion, 2018, 44, 78-96.	11.7	212
102	Minimizing adjusted simple terms in the consensus reaching process with hesitant linguistic assessments in group decision making. Information Sciences, 2015, 297, 95-117.	4.0	208
103	Evolutionary undersampling boosting for imbalanced classification of breast cancer malignancy. Applied Soft Computing Journal, 2016, 38, 714-726.	4.1	206
104	MRPR: A MapReduce solution for prototype reduction in big data classification. Neurocomputing, 2015, 150, 331-345.	3.5	204
105	Tutorial on practical tips of the most influential data preprocessing algorithms in data mining. Knowledge-Based Systems, 2016, 98, 1-29.	4.0	204
106	Genetic tuning of fuzzy rule deep structures preserving interpretability and its interaction with fuzzy rule set reduction. IEEE Transactions on Fuzzy Systems, 2005, 13, 13-29.	6.5	203
107	KEEL 3.0: An Open Source Software for Multi-Stage Analysis in Data Mining. International Journal of Computational Intelligence Systems, 2017, 10, 1238.	1.6	201
108	Connecting the linguistic hierarchy and the numerical scale for the 2-tuple linguistic model and its use to deal with hesitant unbalanced linguistic information. Information Sciences, 2016, 367-368, 259-278.	4.0	199

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109	A position and perspective analysis of hesitant fuzzy sets on information fusion in decision making. Towards high quality progress. Information Fusion, 2016, 29, 89-97.	11.7	199
110	Hesitant Fuzzy Linguistic Term Set and Its Application in Decision Making: A State-of-the-Art Survey. International Journal of Fuzzy Systems, 2018, 20, 2084-2110.	2.3	189
111	Consensus reaching process for large-scale group decision making with double hierarchy hesitant fuzzy linguistic preference relations. Knowledge-Based Systems, 2018, 157, 20-33.	4.0	186
112	On the choice of the best imputation methods for missing values considering three groups of classification methods. Knowledge and Information Systems, 2012, 32, 77-108.	2.1	185
113	Addressing imbalance in multilabel classification: Measures and random resampling algorithms. Neurocomputing, 2015, 163, 3-16.	3.5	185
114	A three-stage evolutionary process for learning descriptive and approximate fuzzy-logic-controller knowledge bases from examples. International Journal of Approximate Reasoning, 1997, 17, 369-407.	1.9	181
115	Large-Scale decision-making: Characterization, taxonomy, challenges and future directions from an Artificial Intelligence and applications perspective. Information Fusion, 2020, 59, 84-102.	11.7	179
116	Linguistic modeling by hierarchical systems of linguistic rules. IEEE Transactions on Fuzzy Systems, 2002, 10, 2-20.	6.5	177
117	Distinguishing between facts and opinions for sentiment analysis: Survey and challenges. Information Fusion, 2018, 44, 65-77.	11.7	176
118	Big Data with Cloud Computing: an insight on the computing environment, <scp>MapReduce</scp>, and programming frameworks. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 2014, 4, 380-409.	4.6	175
119	hg-index: a new index to characterize the scientific output of researchers based on the h- and g-indices. Scientometrics, 2010, 82, 391-400.	1.6	167
120	A linear programming method for multiple criteria decision making with probabilistic linguistic information. Information Sciences, 2017, 415-416, 341-355.	4.0	167
121	Hierarchical fuzzy rule based classification systems with genetic rule selection for imbalanced data-sets. International Journal of Approximate Reasoning, 2009, 50, 561-577.	1.9	166
122	Cognitive Computing: Architecture, Technologies and Intelligent Applications. IEEE Access, 2018, 6, 19774-19783.	2.6	166
123	A Proposal for the Genetic Lateral Tuning of Linguistic Fuzzy Systems and Its Interaction With Rule Selection. IEEE Transactions on Fuzzy Systems, 2007, 15, 616-635.	6.5	164
124	An overview on managing additive consistency of reciprocal preference relations for consistency-driven decision making and fusion: Taxonomy and future directions. Information Fusion, 2019, 52, 143-156.	11.7	164
125	A learning process for fuzzy control rules using genetic algorithms. Fuzzy Sets and Systems, 1998, 100, 143-158.	1.6	162
126	A memetic algorithm for evolutionary prototype selection: A scaling up approach. Pattern Recognition, 2008, 41, 2693-2709.	5.1	162

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127	On the combination of genetic fuzzy systems and pairwise learning for improving detection rates on Intrusion Detection Systems. Expert Systems With Applications, 2015, 42, 193-202.	4.4	162
128	An overview of MULTIMOORA for multi-criteria decision-making: Theory, developments, applications, and challenges. Information Fusion, 2019, 51, 145-177.	11.7	162
129	Memetic Algorithms for Continuous Optimisation Based on Local Search Chains. Evolutionary Computation, 2010, 18, 27-63.	2.3	155
130	Learning the membership function contexts for mining fuzzy association rules by using genetic algorithms. Fuzzy Sets and Systems, 2009, 160, 905-921.	1.6	154
131	Evolutionary Fuzzy Systems for Explainable Artificial Intelligence: Why, When, What for, and Where to?. IEEE Computational Intelligence Magazine, 2019, 14, 69-81.	3.4	154
132	A Tutorial On the design, experimentation and application of metaheuristic algorithms to real-World optimization problems. Swarm and Evolutionary Computation, 2021, 64, 100888.	4.5	154
133	A Multiobjective Evolutionary Approach to Concurrently Learn Rule and Data Bases of Linguistic Fuzzy-Rule-Based Systems. IEEE Transactions on Fuzzy Systems, 2009, 17, 1106-1122.	6.5	153
134	An insight into imbalanced Big Data classification: outcomes and challenges. Complex & Intelligent Systems, 2017, 3, 105-120.	4.0	153
135	Deriving the priority weights from incomplete hesitant fuzzy preference relations in group decision making. Knowledge-Based Systems, 2016, 99, 71-78.	4.0	148
136	Consensus model for large-scale group decision making based on fuzzy preference relation with self-confidence: Detecting and managing overconfidence behaviors. Information Fusion, 2019, 52, 245-256.	11.7	148
137	Editorial scalability of evolutionary algorithms and other metaheuristics for large-scale continuous optimization problems. Soft Computing, 2011, 15, 2085-2087.	2.1	147
138	Applicability of the fuzzy operators in the design of fuzzy logic controllers. Fuzzy Sets and Systems, 1997, 86, 15-41.	1.6	144
139	Addressing data complexity for imbalanced data sets: analysis of SMOTE-based oversampling and evolutionary undersampling. Soft Computing, 2011, 15, 1909-1936.	2.1	144
140	MLSMOTE: Approaching imbalanced multilabel learning through synthetic instance generation. Knowledge-Based Systems, 2015, 89, 385-397.	4.0	144
141	Personalized individual semantics based on consistency in hesitant linguistic group decision making with comparative linguistic expressions. Knowledge-Based Systems, 2018, 145, 156-165.	4.0	143
142	Score-HeDLiSF: A score function of hesitant fuzzy linguistic term set based on hesitant degrees and linguistic scale functions: An application to unbalanced hesitant fuzzy linguistic MULTIMOORA. Information Fusion, 2019, 48, 39-54.	11.7	143
143	Integration of an Index to Preserve the Semantic Interpretability in the Multiobjective Evolutionary Rule Selection and Tuning of Linguistic Fuzzy Systems. IEEE Transactions on Fuzzy Systems, 2010, 18, 515-531.	6.5	141
144	Replacement strategies to preserve useful diversity in steady-state genetic algorithms. Information Sciences, 2008, 178, 4421-4433.	4.0	140

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145	A Fast and Scalable Multiobjective Genetic Fuzzy System for Linguistic Fuzzy Modeling in High-Dimensional Regression Problems. IEEE Transactions on Fuzzy Systems, 2011, 19, 666-681.	6.5	139
146	Distributed linguistic representations in decision making: Taxonomy, key elements and applications, and challenges in data science and explainable artificial intelligence. Information Fusion, 2021, 65, 165-178.	11.7	138
147	Genetics-Based Machine Learning for Rule Induction: State of the Art, Taxonomy, and Comparative Study. IEEE Transactions on Evolutionary Computation, 2010, 14, 913-941.	7.5	137
148	Fuzzy connectives based crossover operators to model genetic algorithms population diversity. Fuzzy Sets and Systems, 1997, 92, 21-30.	1.6	136
149	Interval Type-2 Fuzzy Sets are Generalization of Interval-Valued Fuzzy Sets: Toward a Wider View on Their Relationship. IEEE Transactions on Fuzzy Systems, 2015, 23, 1876-1882.	6.5	136
150	A Compact Evolutionary Interval-Valued Fuzzy Rule-Based Classification System for the Modeling and Prediction of Real-World Financial Applications With Imbalanced Data. IEEE Transactions on Fuzzy Systems, 2015, 23, 973-990.	6.5	133
151	Enhancing Multiclass Classification in FARC-HD Fuzzy Classifier: On the Synergy Between n-Dimensional Overlap Functions and Decomposition Strategies. IEEE Transactions on Fuzzy Systems, 2015, 23, 1562-1580.	6.5	132
152	Automatic handgun detection alarm in videos using deep learning. Neurocomputing, 2018, 275, 66-72.	3.5	132
153	Revisiting Fuzzy and Linguistic Decision Making: Scenarios and Challenges for Making Wiser Decisions in a Better Way. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 191-208.	5.9	132
154	Implementing algorithms of rough set theory and fuzzy rough set theory in the R package â€œRoughSetsâ€• Information Sciences, 2014, 287, 68-89.	4.0	129
155	Consensus Reaching and Strategic Manipulation in Group Decision Making With Trust Relationships. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 6304-6318.	5.9	128
156	A proposal for improving the accuracy of linguistic modeling. IEEE Transactions on Fuzzy Systems, 2000, 8, 335-344.	6.5	127
157	A study of the origin and uses of the ordered weighted geometric operator in multicriteria decision making. International Journal of Intelligent Systems, 2003, 18, 689-707.	3.3	127
158	Induced ordered weighted geometric operators and their use in the aggregation of multiplicative preference relations. International Journal of Intelligent Systems, 2004, 19, 233-255.	3.3	127
159	A study on the use of statistical tests for experimentation with neural networks: Analysis of parametric test conditions and non-parametric tests. Expert Systems With Applications, 2009, 36, 7798-7808.	4.4	127
160	Score function based on concentration degree for probabilistic linguistic term sets: An application to TOPSIS and VIKOR. Information Sciences, 2021, 551, 270-290.	4.0	126
161	Linguistic measures based on fuzzy coincidence for reaching consensus in group decision making. International Journal of Approximate Reasoning, 1997, 16, 309-334.	1.9	125
162	On the importance of the validation technique for classification with imbalanced datasets: Addressing covariate shift when data is skewed. Information Sciences, 2014, 257, 1-13.	4.0	125

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163	Fast-mRMR: Fast Minimum Redundancy Maximum Relevance Algorithm for High-Dimensional Big Data. International Journal of Intelligent Systems, 2017, 32, 134-152.	3.3	125
164	Probabilistic double hierarchy linguistic term set and its use in designing an improved VIKOR method: The application in smart healthcare. Journal of the Operational Research Society, 2021, 72, 2611-2630.	2.1	125
165	Comprehensive Taxonomies of Nature- and Bio-inspired Optimization: Inspiration Versus Algorithmic Behavior, Critical Analysis Recommendations. Cognitive Computation, 2020, 12, 897-939.	3.6	125
166	Evolutionary-based selection of generalized instances for imbalanced classification. Knowledge-Based Systems, 2012, 25, 3-12.	4.0	123
167	Social network analysis-based conflict relationship investigation and conflict degree-based consensus reaching process for large scale decision making using sparse representation. Information Fusion, 2019, 50, 251-272.	11.7	123
168	IVTURS: A Linguistic Fuzzy Rule-Based Classification System Based On a New Interval-Valued Fuzzy Reasoning Method With Tuning and Rule Selection. IEEE Transactions on Fuzzy Systems, 2013, 21, 399-411.	6.5	122
169	Sentiment Analysis in TripAdvisor. IEEE Intelligent Systems, 2017, 32, 72-77.	4.0	122
170	Big Data: Tutorial and guidelines on information and process fusion for analytics algorithms with MapReduce. Information Fusion, 2018, 42, 51-61.	11.7	122
171	Adaptation and application of multi-objective evolutionary algorithms for rule reduction and parameter tuning of fuzzy rule-based systems. Soft Computing, 2009, 13, 419-436.	2.1	121
172	A genetic tuning to improve the performance of Fuzzy Rule-Based Classification Systems with Interval-Valued Fuzzy Sets: Degree of ignorance and lateral position. International Journal of Approximate Reasoning, 2011, 52, 751-766.	1.9	121
173	Artificial intelligence within the interplay between natural and artificial computation: Advances in data science, trends and applications. Neurocomputing, 2020, 410, 237-270.	3.5	121
174	Revisiting Evolutionary Fuzzy Systems: Taxonomy, applications, new trends and challenges. Knowledge-Based Systems, 2015, 80, 109-121.	4.0	120
175	Deep-learning Versus OBIA for Scattered Shrub Detection with Google Earth Imagery: Ziziphus lotus as Case Study. Remote Sensing, 2017, 9, 1220.	1.8	120
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