

Jesus Alcala-Fdez

List of Publications by Year in descending order

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125
papers

12,214
citations

81743

39
h-index

40881

93
g-index

127
all docs

127
docs citations

127
times ranked

8948
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. Information Fusion, 2020, 58, 82-115. | 11.7 | 3,332 |
| 2 | A study on the use of non-parametric tests for analyzing the evolutionary algorithms' behaviour: a case study on the 2005 Special Session on Real Parameter Optimization. Journal of Heuristics, 2009, 15, 617-644. | 1.1 | 1,454 |
| 3 | KEEL: a software tool to assess evolutionary algorithms for data mining problems. Soft Computing, 2009, 13, 307-318. | 2.1 | 1,165 |
| 4 | Data Preprocessing in Data Mining. Intelligent Systems Reference Library, 2015, , . | 1.0 | 541 |
| 5 | 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 |
| 6 | Self-labeled techniques for semi-supervised learning: taxonomy, software and empirical study. Knowledge and Information Systems, 2015, 42, 245-284. | 2.1 | 377 |
| 7 | Evolutionary Undersampling for Classification with Imbalanced Datasets: Proposals and Taxonomy. Evolutionary Computation, 2009, 17, 275-306. | 2.3 | 312 |
| 8 | 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 |
| 9 | A consistency-based procedure to estimate missing pairwise preference values. International Journal of Intelligent Systems, 2008, 23, 155-175. | 3.3 | 251 |
| 10 | 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 |
| 11 | 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 |
| 12 | 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 |
| 13 | 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 |
| 14 | 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 |
| 15 | jFuzzyLogic: a Java Library to Design Fuzzy Logic Controllers According to the Standard for Fuzzy Control Programming. International Journal of Computational Intelligence Systems, 2013, 6, 61. | 1.6 | 157 |
| 16 | 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 |
| 17 | Addressing data complexity for imbalanced data sets: analysis of SMOTE-based oversampling and evolutionary undersampling. Soft Computing, 2011, 15, 1909-1936. | 2.1 | 144 |
| 18 | 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 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 19 | jFuzzyLogic: a robust and flexible Fuzzy-Logic inference system language implementation. , 2012, , . | | 133 |
| 20 | Dynamic ensemble selection for multi-class imbalanced datasets. Information Sciences, 2018, 445-446, 22-37. | 4.0 | 119 |
| 21 | A MULTI-OBJECTIVE GENETIC ALGORITHM FOR TUNING AND RULE SELECTION TO OBTAIN ACCURATE AND COMPACT LINGUISTIC FUZZY RULE-BASED SYSTEMS. International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, 2007, 15, 539-557. | 0.9 | 109 |
| 22 | Data discretization: taxonomy and big data challenge. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 2016, 6, 5-21. | 4.6 | 105 |
| 23 | Genetic learning of accurate and compact fuzzy rule based systems based on the 2-tuples linguistic representation. International Journal of Approximate Reasoning, 2007, 44, 45-64. | 1.9 | 104 |
| 24 | A Survey of Fuzzy Systems Software: Taxonomy, Current Research Trends, and Prospects. IEEE Transactions on Fuzzy Systems, 2016, 24, 40-56. | 6.5 | 91 |
| 25 | Transforming big data into smart data: An insight on the use of the k-nearest neighbors algorithm to obtain quality data. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 2019, 9, e1289. | 4.6 | 88 |
| 26 | A New Multiobjective Evolutionary Algorithm for Mining a Reduced Set of Interesting Positive and Negative Quantitative Association Rules. IEEE Transactions on Evolutionary Computation, 2014, 18, 54-69. | 7.5 | 84 |
| 27 | Hybrid learning models to get the interpretability-accuracy trade-off in fuzzy modeling. Soft Computing, 2006, 10, 717-734. | 2.1 | 82 |
| 28 | NICGAR: A Niching Genetic Algorithm to mine a diverse set of interesting quantitative association rules. Information Sciences, 2016, 355-356, 208-228. | 4.0 | 71 |
| 29 | QAR-CIP-NSGA-II: A new multi-objective evolutionary algorithm to mine quantitative association rules. Information Sciences, 2014, 258, 1-28. | 4.0 | 63 |
| 30 | Evolutionary fuzzy k-nearest neighbors algorithm using interval-valued fuzzy sets. Information Sciences, 2016, 329, 144-163. | 4.0 | 61 |
| 31 | A tutorial on distance metric learning: Mathematical foundations, algorithms, experimental analysis, prospects and challenges. Neurocomputing, 2021, 425, 300-322. | 3.5 | 61 |
| 32 | Nearest Neighbor Classification for High-Speed Big Data Streams Using Spark. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2017, 47, 2727-2739. | 5.9 | 60 |
| 33 | On the use of convolutional neural networks for robust classification of multiple fingerprint captures. International Journal of Intelligent Systems, 2018, 33, 213-230. | 3.3 | 58 |
| 34 | Local identification of prototypes for genetic learning of accurate TSK fuzzy rule-based systems. International Journal of Intelligent Systems, 2007, 22, 909-941. | 3.3 | 54 |
| 35 | Imbalance: Oversampling algorithms for imbalanced classification in R. Knowledge-Based Systems, 2018, 161, 329-341. | 4.0 | 53 |
| 36 | Monotonic classification: An overview on algorithms, performance measures and data sets. Neurocomputing, 2019, 341, 168-182. | 3.5 | 50 |

| # | ARTICLE | IF | CITATIONS |
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| 37 | Improving fuzzy logic controllers obtained by experts: a case study in HVAC systems. <i>Applied Intelligence</i> , 2009, 31, 15-30. | 3.3 | 46 |
| 38 | Rule Base Reduction and Genetic Tuning of Fuzzy Systems Based on the Linguistic 3-tuples Representation. <i>Soft Computing</i> , 2006, 11, 401-419. | 2.1 | 45 |
| 39 | Increasing fuzzy rules cooperation based on evolutionary adaptive inference systems. <i>International Journal of Intelligent Systems</i> , 2007, 22, 1035-1064. | 3.3 | 45 |
| 40 | JFML: A Java Library to Design Fuzzy Logic Systems According to the IEEE Std 1855-2016. <i>IEEE Access</i> , 2018, 6, 54952-54964. | 2.6 | 45 |
| 41 | eXplainable Artificial Intelligence (XAI) for the identification of biologically relevant gene expression patterns in longitudinal human studies, insights from obesity research. <i>PLoS Computational Biology</i> , 2020, 16, e1007792. | 1.5 | 44 |
| 42 | Monotonic Random Forest with an Ensemble Pruning Mechanism based on the Degree of Monotonicity. <i>New Generation Computing</i> , 2015, 33, 367-388. | 2.5 | 36 |
| 43 | Genetic learning of the membership functions for mining fuzzy association rules from low quality data. <i>Information Sciences</i> , 2015, 295, 358-378. | 4.0 | 36 |
| 44 | Evolutionary Fuzzy Rule-Based Methods for Monotonic Classification. <i>IEEE Transactions on Fuzzy Systems</i> , 2017, 25, 1376-1390. | 6.5 | 36 |
| 45 | MRQAR: A generic MapReduce framework to discover quantitative association rules in big data problems. <i>Knowledge-Based Systems</i> , 2018, 153, 176-192. | 4.0 | 35 |
| 46 | Stratified prototype selection based on a steady-state memetic algorithm: a study of scalability. <i>Memetic Computing</i> , 2010, 2, 183-199. | 2.7 | 33 |
| 47 | Fast and Scalable Approaches to Accelerate the Fuzzy k -Nearest Neighbors Classifier for Big Data. <i>IEEE Transactions on Fuzzy Systems</i> , 2020, 28, 874-886. | 6.5 | 31 |
| 48 | A snapshot on nonstandard supervised learning problems: taxonomy, relationships, problem transformations and algorithm adaptations. <i>Progress in Artificial Intelligence</i> , 2019, 8, 1-14. | 1.5 | 29 |
| 49 | DRCW-ASEG: One-versus-One distance-based relative competence weighting with adaptive synthetic example generation for multi-class imbalanced datasets. <i>Neurocomputing</i> , 2018, 285, 176-187. | 3.5 | 28 |
| 50 | Analysis of the Effectiveness of the Genetic Algorithms based on Extraction of Association Rules. <i>Fundamenta Informaticae</i> , 2010, 98, 1-14. | 0.3 | 26 |
| 51 | Guest Editorial Genetic Fuzzy Systems: What's Next? An Introduction to the Special Section. <i>IEEE Transactions on Fuzzy Systems</i> , 2007, 15, 533-535. | 6.5 | 24 |
| 52 | Prototype selection to improve monotonic nearest neighbor. <i>Engineering Applications of Artificial Intelligence</i> , 2017, 60, 128-135. | 4.3 | 22 |
| 53 | Financial time series forecasting with a bio-inspired fuzzy model. <i>Expert Systems With Applications</i> , 2012, 39, 12302-12309. | 4.4 | 21 |
| 54 | Instance reduction for one-class classification. <i>Knowledge and Information Systems</i> , 2019, 59, 601-628. | 2.1 | 21 |

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| 55 | EUSC: A clustering-based surrogate model to accelerate evolutionary undersampling in imbalanced classification. <i>Applied Soft Computing Journal</i> , 2021, 101, 107033. | 4.1 | 21 |
| 56 | Current prospects on ordinal and monotonic classification. <i>Progress in Artificial Intelligence</i> , 2016, 5, 171-179. | 1.5 | 19 |
| 57 | Chain based sampling for monotonic imbalanced classification. <i>Information Sciences</i> , 2019, 474, 187-204. | 4.0 | 19 |
| 58 | Distributed Entropy Minimization Discretizer for Big Data Analysis under Apache Spark. , 2015, , . | | 17 |
| 59 | Mining fuzzy association rules from low-quality data. <i>Soft Computing</i> , 2012, 16, 883-901. | 2.1 | 16 |
| 60 | Experimental Study on 164 Algorithms Available in Software Tools for Solving Standard Non-Linear Regression Problems. <i>IEEE Access</i> , 2019, 7, 108916-108939. | 2.6 | 15 |
| 61 | Omics Approaches in Adipose Tissue and Skeletal Muscle Addressing the Role of Extracellular Matrix in Obesity and Metabolic Dysfunction. <i>International Journal of Molecular Sciences</i> , 2021, 22, 2756. | 1.8 | 15 |
| 62 | Hybrid laser pointer detection algorithm based on template matching and fuzzy rule-based systems for domotic control inArealAhome environments. <i>Applied Intelligence</i> , 2012, 36, 407-423. | 3.3 | 14 |
| 63 | Learning weighted linguistic rules to control an autonomous robot. <i>International Journal of Intelligent Systems</i> , 2009, 24, 226-251. | 3.3 | 13 |
| 64 | Exact fuzzy k-nearest neighbor classification for big datasets. , 2017, , . | | 13 |
| 65 | Smartdata: Data preprocessing to achieve smart data in R. <i>Neurocomputing</i> , 2019, 360, 1-13. | 3.5 | 13 |
| 66 | Temporal association rule mining: An overview considering the time variable as an integral or implied component. <i>Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery</i> , 2020, 10, e1367. | 4.6 | 13 |
| 67 | A case study for learning behaviors in mobile robotics by evolutionary fuzzy systems. <i>Expert Systems With Applications</i> , 2010, 37, 1471-1493. | 4.4 | 12 |
| 68 | A multi-objective evolutionary algorithm for mining quantitative association rules. , 2011, , . | | 12 |
| 69 | From Big to Smart Data: Iterative ensemble filter for noise filtering in Big Data classification. <i>International Journal of Intelligent Systems</i> , 2019, 34, 3260-3274. | 3.3 | 12 |
| 70 | Statistical analysis of convergence performance throughout the evolutionary search: A case study with SaDE-MMTS and Sa-EPsDE-MMTS. , 2013, , . | | 11 |
| 71 | From Big Data to Smart Data with the K-Nearest Neighbours Algorithm. , 2016, , . | | 11 |
| 72 | Py4JFML: A Python wrapper for using the IEEE Std 1855-2016 through JFML. , 2019, , . | | 11 |

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| 73 | Genetic Learning of Membership Functions for Mining Fuzzy Association Rules. IEEE International Conference on Fuzzy Systems, 2007, , . | 0.0 | 10 |
| 74 | A Multi-Objective Evolutionary Algorithm for Rule Selection and Tuning on Fuzzy Rule-Based Systems. IEEE International Conference on Fuzzy Systems, 2007, , . | 0.0 | 10 |
| 75 | KEEL: A data mining software tool integrating genetic fuzzy systems. , 2008, , . | | 10 |
| 76 | Fuzzy k-nearest neighbors with monotonicity constraints: Moving towards the robustness of monotonic noise. Neurocomputing, 2021, 439, 106-121. | 3.5 | 10 |
| 77 | Fuzzy-genetic optimization of the parameters of a low cost system for the optical measurement of several dimensions of vehicles. Soft Computing, 2008, 12, 751-764. | 2.1 | 9 |
| 78 | A new fingram-based software tool for visual representation and analysis of fuzzy association rules. , 2013, , . | | 9 |
| 79 | Special Issue on Software Tools for Soft Computing. International Journal of Computational Intelligence Systems, 2013, 6, 1. | 1.6 | 9 |
| 80 | MoNGEL: monotonic nested generalized exemplar learning. Pattern Analysis and Applications, 2017, 20, 441-452. | 3.1 | 9 |
| 81 | DILS: Constrained clustering through dual iterative local search. Computers and Operations Research, 2020, 121, 104979. | 2.4 | 9 |
| 82 | Label noise filtering techniques to improve monotonic classification. Neurocomputing, 2019, 353, 83-95. | 3.5 | 8 |
| 83 | ProLSFEO-LDL: Prototype Selection and Label- Specific Feature Evolutionary Optimization for Label Distribution Learning. Applied Sciences (Switzerland), 2020, 10, 3089. | 1.3 | 8 |
| 84 | Mining high average-utility sequential rules to identify high-utility gene expression sequences in longitudinal human studies. Expert Systems With Applications, 2022, 193, 116411. | 4.4 | 8 |
| 85 | A First Approach to Nearest Hyperrectangle Selection by Evolutionary Algorithms. , 2009, , . | | 7 |
| 86 | Analyzing fuzzy association rules with Fingrams in KEEL. , 2014, , . | | 7 |
| 87 | Synthetic Sample Generation for Label Distribution Learning. Information Sciences, 2021, 544, 197-213. | 4.0 | 7 |
| 88 | Addressing Data-Complexity for Imbalanced Data-Sets: A Preliminary Study on the Use of Preprocessing for C4.5. , 2009, , . | | 6 |
| 89 | Genetic tuning of a laser pointer environment control device system for handicapped people with fuzzy systems. , 2010, , . | | 6 |
| 90 | Ordinal regression with explainable distance metric learning based on ordered sequences. Machine Learning, 2021, 110, 2729-2762. | 3.4 | 6 |

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| 91 | Interpretability analysis of fuzzy association rules supported by fingrams. , 2013, , . | | 6 |
| 92 | A preliminary study on the use of differential evolution for adjusting the position of examples in nearest neighbor classification. , 2010, , . | | 5 |
| 93 | Special issue on Hybrid Fuzzy Models. International Journal of Hybrid Intelligent Systems, 2010, 7, 1-1. | 0.9 | 5 |
| 94 | Evolutionary learning of a laser pointer detection fuzzy system for an environment control system. , 2011, , . | | 5 |
| 95 | Evolutionary data mining and applications: A revision on the most cited papers from the last 10 years (2007â€“2017). Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 2018, 8, e1239. | 4.6 | 5 |
| 96 | Enhancing instance-level constrained clustering through differential evolution. Applied Soft Computing Journal, 2021, 108, 107435. | 4.1 | 5 |
| 97 | ME-MEOA/D<math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si2.svg"><mml:msub><mml:mrow /><mml:mrow><mml:mi>C</mml:mi><mml:mi>C</mml:mi></mml:mrow></mml:msub></mml:math>: Multiobjective constrained clustering through decomposition-based memetic elitism. Swarm and Evolutionary Computation, 2021, 66, 100930. | 4.5 | 5 |
| 98 | Interoperability for Embedded Systems in JFML Software: An Arduino-based implementation. , 2018, , . | | 4 |
| 99 | A preliminary study on Hybrid Spill-Tree Fuzzy k-Nearest Neighbors for big data classification. , 2018, , . | | 4 |
| 100 | Transparent but Accurate Evolutionary Regression Combining New Linguistic Fuzzy Grammar and a Novel Interpretable Linear Extension. International Journal of Fuzzy Systems, 2022, 24, 3082-3103. | 2.3 | 4 |
| 101 | A first attempt on evolutionary prototype reduction for nearest neighbor one-class classification. , 2014, , . | | 3 |
| 102 | On the statistical analysis of the parametersâ€™ trend in a machine learning algorithm. Progress in Artificial Intelligence, 2014, 3, 51-53. | 1.5 | 3 |
| 103 | VisualJFML: A Visual Environment for Designing Fuzzy Systems according to IEEE Std 1855-2016. , 2019, , . | | 3 |
| 104 | An approach to bridge the gap between ubiquitous embedded devices and JFML: A new module for Internet of Things. , 2021, , . | | 3 |
| 105 | Evolutionary Extraction of Association Rules: A Preliminary Study on their Effectiveness. Lecture Notes in Computer Science, 2009, , 646-653. | 1.0 | 3 |
| 106 | Implementation and Integration of Algorithms into the KEEL Data-Mining Software Tool. Lecture Notes in Computer Science, 2009, , 562-569. | 1.0 | 3 |
| 107 | Landmark-based music recognition system optimisation using genetic algorithms. Multimedia Tools and Applications, 2016, 75, 16905-16922. | 2.6 | 2 |
| 108 | A Hybrid Surrogate Model for Evolutionary Undersampling in Imbalanced Classification. , 2020, , . | | 2 |

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| 109 | Meta-Fuzzy Items for Fuzzy Association Rules. , 2021, , . | | 2 |
| 110 | Data Reduction for Big Data. , 2020, , 81-99. | | 2 |
| 111 | A Data Mining Software Package Including Data Preparation and Reduction: KEEL. Intelligent Systems Reference Library, 2015, , 285-313. | 1.0 | 2 |
| 112 | A First Approach on Big Data Missing Values Imputation. , 2019, , . | | 2 |
| 113 | Fuzzy Autoregressive Rules: Towards Linguistic Time Series Modeling. Econometric Reviews, 2011, 30, 646-668. | 0.5 | 1 |
| 114 | Special Issue on Computational Intelligence Software Guest Editorial. IEEE Computational Intelligence Magazine, 2016, 11, 13-14. | 3.4 | 1 |
| 115 | Evaluation of the Predictive Ability, Environmental Regulation and Pharmacogenetics Utility of a BMI-Predisposing Genetic Risk Score during Childhood and Puberty. Journal of Clinical Medicine, 2020, 9, 1705. | 1.0 | 1 |
| 116 | Distance Metric Learning with Prototype Selection for Imbalanced Classification. Lecture Notes in Computer Science, 2021, , 391-402. | 1.0 | 1 |
| 117 | SOUL: Scala Oversampling and Undersampling Library for imbalance classification. SoftwareX, 2021, 15, 100767. | 1.2 | 1 |
| 118 | Improving constrained clustering via decomposition-based multiobjective optimization with memetic elitism. , 2020, , . | | 1 |
| 119 | New open source modules in KEEL to analyze and export fuzzy association rules. , 2016, , . | | 0 |
| 120 | Agglomerative Constrained Clustering Through Similarity and Distance Recalculation. Lecture Notes in Computer Science, 2020, , 424-436. | 1.0 | 0 |
| 121 | 3SHACC: Three stages hybrid agglomerative constrained clustering. Neurocomputing, 2022, 490, 441-461. | 3.5 | 0 |
| 122 | Title is missing!. , 2020, 16, e1007792. | | 0 |
| 123 | Title is missing!. , 2020, 16, e1007792. | | 0 |
| 124 | Title is missing!. , 2020, 16, e1007792. | | 0 |
| 125 | Title is missing!. , 2020, 16, e1007792. | | 0 |