

## List of Publications by Year in descending order

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136  
papers

8,452  
citations

81743

39  
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54797

84  
g-index

151  
all docs

151  
docs citations

151  
times ranked

3096  
citing authors

#	ARTICLE	IF	CITATIONS
1	Spotted hyena optimizer: A novel bio-inspired based metaheuristic technique for engineering applications. <i>Advances in Engineering Software</i> , 2017, 114, 48-70.	1.8	773
2	Tunicate Swarm Algorithm: A new bio-inspired based metaheuristic paradigm for global optimization. <i>Engineering Applications of Artificial Intelligence</i> , 2020, 90, 103541.	4.3	738
3	Seagull optimization algorithm: Theory and its applications for large-scale industrial engineering problems. <i>Knowledge-Based Systems</i> , 2019, 165, 169-196.	4.0	720
4	Emperor penguin optimizer: A bio-inspired algorithm for engineering problems. <i>Knowledge-Based Systems</i> , 2018, 159, 20-50.	4.0	558
5	STOA: A bio-inspired based optimization algorithm for industrial engineering problems. <i>Engineering Applications of Artificial Intelligence</i> , 2019, 82, 148-174.	4.3	349
6	Prediction of Heart Disease Using a Combination of Machine Learning and Deep Learning. <i>Computational Intelligence and Neuroscience</i> , 2021, 2021, 1-11.	1.1	234
7	A novel algorithm for global optimization: Rat Swarm Optimizer. <i>Journal of Ambient Intelligence and Humanized Computing</i> , 2021, 12, 8457-8482.	3.3	227
8	Multi-objective spotted hyena optimizer: A Multi-objective optimization algorithm for engineering problems. <i>Knowledge-Based Systems</i> , 2018, 150, 175-197.	4.0	190
9	BEPO: A novel binary emperor penguin optimizer for automatic feature selection. <i>Knowledge-Based Systems</i> , 2021, 211, 106560.	4.0	165
10	MOSOA: A new multi-objective seagull optimization algorithm. <i>Expert Systems With Applications</i> , 2021, 167, 114150.	4.4	153
11	Application of Blockchain and Internet of Things in Healthcare and Medical Sector: Applications, Challenges, and Future Perspectives. <i>Journal of Food Quality</i> , 2021, 2021, 1-20.	1.4	150
12	ESA: a hybrid bio-inspired metaheuristic optimization approach for engineering problems. <i>Engineering With Computers</i> , 2021, 37, 323-353.	3.5	125
13	A hybrid fuzzy time series forecasting model based on granular computing and bio-inspired optimization approaches. <i>Journal of Computational Science</i> , 2018, 27, 370-385.	1.5	124
14	Nature-Inspired-Based Approach for Automated Cyberbullying Classification on Multimedia Social Networking. <i>Mathematical Problems in Engineering</i> , 2021, 2021, 1-12.	0.6	114
15	A novel content-based image retrieval approach for classification using GLCM features and texture fused LBP variants. <i>Neural Computing and Applications</i> , 2021, 33, 1311-1328.	3.2	112
16	A Spring Search Algorithm Applied to Engineering Optimization Problems. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 6173.	1.3	105
17	Dynamic voltage frequency scaling for multi-tasking systems using online learning. , 2007, , .		104
18	Conceptualizing smart city applications: Requirements, architecture, security issues, and emerging trends. <i>Expert Systems</i> , 2022, 39, .	2.9	104

#	ARTICLE	IF	CITATIONS
19	DON: Deep Learning and Optimization-Based Framework for Detection of Novel Coronavirus Disease Using X-ray Images. <i>Interdisciplinary Sciences, Computational Life Sciences</i> , 2021, 13, 260-272.	2.2	96
20	An improved opposition-based marine predators algorithm for global optimization and multilevel thresholding image segmentation. <i>Knowledge-Based Systems</i> , 2021, 229, 107348.	4.0	92
21	EMoSQA: a new evolutionary multi-objective seagull optimization algorithm for global optimization. <i>International Journal of Machine Learning and Cybernetics</i> , 2021, 12, 571-596.	2.3	88
22	SSC: A hybrid nature-inspired meta-heuristic optimization algorithm for engineering applications. <i>Knowledge-Based Systems</i> , 2021, 222, 106926.	4.0	83
23	MOSHEPO: a hybrid multi-objective approach to solve economic load dispatch and micro grid problems. <i>Applied Intelligence</i> , 2020, 50, 119-137.	3.3	82
24	System-Level Power Management Using Online Learning. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2009, 28, 676-689.	1.9	73
25	Uncertainty representation using fuzzy-entropy approach: Special application in remotely sensed high-resolution satellite images (RSHRSIs). <i>Applied Soft Computing Journal</i> , 2018, 72, 121-139.	4.1	72
26	Optimizing the Design of Airfoil and Optical Buffer Problems Using Spotted Hyena Optimizer. <i>Designs</i> , 2018, 2, 28.	1.3	67
27	Ubiquitous Vehicular Ad-Hoc Network Computing Using Deep Neural Network with IoT-Based Bat Agents for Traffic Management. <i>Electronics (Switzerland)</i> , 2021, 10, 785.	1.8	67
28	Spotted Hyena Optimizer for Solving Engineering Design Problems. , 2017, , .		64
29	Deep Learning Model for the Automatic Classification of White Blood Cells. <i>Computational Intelligence and Neuroscience</i> , 2022, 2022, 1-13.	1.1	59
30	ADOPT: automatic deep learning and optimization-based approach for detection of novel coronavirus COVID-19 disease using X-ray images. <i>Journal of Biomolecular Structure and Dynamics</i> , 2022, 40, 5836-5847.	2.0	57
31	Spotted Hyena Optimizer for Solving Complex and Non-linear Constrained Engineering Problems. <i>Advances in Intelligent Systems and Computing</i> , 2019, , 857-867.	0.5	56
32	KnRVEA: A hybrid evolutionary algorithm based on knee points and reference vector adaptation strategies for many-objective optimization. <i>Applied Intelligence</i> , 2019, 49, 2434-2460.	3.3	55
33	A Hybrid Algorithm Based on Particle Swarm and Spotted Hyena Optimizer for Global Optimization. <i>Advances in Intelligent Systems and Computing</i> , 2019, , 599-615.	0.5	53
34	ED-SHO: A framework for solving nonlinear economic load power dispatch problem using spotted hyena optimizer. <i>Modern Physics Letters A</i> , 2018, 33, 1850239.	0.5	51
35	Performance Evaluation of Multilayer Clustering Network Using Distributed Energy Efficient Clustering with Enhanced Threshold Protocol. <i>Wireless Personal Communications</i> , 2022, 126, 2175-2189.	1.8	49
36	Deep Convolution Neural Network Approach for Defect Inspection of Textured Surfaces. <i>Journal of the Institute of Electronics and Computer</i> , 2020, 2, 28-38.	2.7	49

#	ARTICLE	IF	CITATIONS
37	A quantum approach for time series data based on graph and Schrödinger equations methods. Modern Physics Letters A, 2018, 33, 1850208.	0.5	47
38	Darts Game Optimizer: A New Optimization Technique Based on Darts Game. International Journal of Intelligent Engineering and Systems, 2020, 13, 286-294.	0.8	47
39	MOEPO: A novel Multi-objective Emperor Penguin Optimizer for global optimization: Special application in ranking of cloud service providers. Engineering Applications of Artificial Intelligence, 2020, 96, 104008.	4.3	46
40	Automatic detection of cyberbullying using multi-feature based artificial intelligence with deep decision tree classification. Computers and Electrical Engineering, 2021, 92, 107186.	3.0	46
41	A quantum method for dynamic nonlinear programming technique using Schrödinger equation and Monte Carlo approach. Modern Physics Letters B, 2018, 32, 1850374.	1.0	43
42	Distributed Deep CNN-LSTM Model for Intrusion Detection Method in IoT-Based Vehicles. Mathematical Problems in Engineering, 2022, 2022, 1-8.	0.6	42
43	A Review on Search-Based Tools and Techniques to Identify Bad Code Smells in Object-Oriented Systems. Advances in Intelligent Systems and Computing, 2019, , 909-921.	0.5	41
44	SChoA: a newly fusion of sine and cosine with chimp optimization algorithm for HLS of datapaths in digital filters and engineering applications. Engineering With Computers, 2022, 38, 975-1003.	3.5	40
45	A New Hybrid Deep Learning Algorithm for Prediction of Wide Traffic Congestion in Smart Cities. Wireless Communications and Mobile Computing, 2021, 2021, 1-13.	0.8	40
46	Cloud-Based Fault Prediction Using IoT in Office Automation for Improvisation of Health of Employees. Journal of Healthcare Engineering, 2021, 2021, 1-13.	1.1	40
47	A novel hybrid hypervolume indicator and reference vector adaptation strategies based evolutionary algorithm for many-objective optimization. Engineering With Computers, 2021, 37, 3017-3035.	3.5	39
48	A four-way decision-making system for the Indian summer monsoon rainfall. Modern Physics Letters B, 2018, 32, 1850304.	1.0	38
49	Opposition-based moth swarm algorithm. Expert Systems With Applications, 2021, 184, 115481.	4.4	38
50	MoSSE: a novel hybrid multi-objective meta-heuristic algorithm for engineering design problems. Soft Computing, 2020, 24, 18379-18398.	2.1	37
51	Gene Expression-Assisted Cancer Prediction Techniques. Journal of Healthcare Engineering, 2021, 2021, 1-9.	1.1	37
52	An Analysis of Modeling and Optimization Production Cost Through Fuzzy Linear Programming Problem with Symmetric and Right Angle Triangular Fuzzy Number. Advances in Intelligent Systems and Computing, 2017, , 197-211.	0.5	37
53	A Novel Machine-Learning-Based Hybrid CNN Model for Tumor Identification in Medical Image Processing. Sustainability, 2022, 14, 1447.	1.6	37
54	Astrophysics inspired multi-objective approach for automatic clustering and feature selection in real-life environment. Modern Physics Letters B, 2018, 32, 1850385.	1.0	36

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55	Binary Spring Search Algorithm for Solving Various Optimization Problems. Applied Sciences (Switzerland), 2021, 11, 1286.	1.3	34
56	MLO: Multi Leader Optimizer. International Journal of Intelligent Engineering and Systems, 2020, 13, 364-373.	0.8	33
57	Pattern analysis: predicting COVID-19 pandemic in India using AutoML. World Journal of Engineering, 2022, 19, 21-28.	1.0	31
58	COVID-19: Challenges and its Technological Solutions using IoT. Current Medical Imaging, 2022, 18, 113-123.	0.4	31
59	Analysis of protein-ligand interactions of SARS-CoV-2 against selective drug using deep neural networks. Big Data Mining and Analytics, 2021, 4, 76-83.	7.5	31
60	A Detailed Research on Human Health Monitoring System Based on Internet of Things. Wireless Communications and Mobile Computing, 2021, 2021, 1-9.	0.8	30
61	DM: Dehghani Method for Modifying Optimization Algorithms. Applied Sciences (Switzerland), 2020, 10, 7683.	1.3	28
62	COVID-19: Role of Robotics, Artificial Intelligence and Machine Learning During the Pandemic. Current Medical Imaging, 2022, 18, 124-134.	0.4	28
63	Adaptive Diagnosis of Lung Cancer by Deep Learning Classification Using Wilcoxon Gain and Generator. Journal of Healthcare Engineering, 2021, 2021, 1-13.	1.1	28
64	A Perspective Roadmap for IoMT-Based Early Detection and Care of the Neural Disorder, Dementia. Journal of Healthcare Engineering, 2021, 2021, 1-11.	1.1	28
65	Federated Learning Approach to Protect Healthcare Data over Big Data Scenario. Sustainability, 2022, 14, 2500.	1.6	28
66	An IoT and machine learning-based routing protocol for reconfigurable engineering application. IET Communications, 2022, 16, 464-475.	1.5	26
67	Internet of Things for sustaining a smart and secure healthcare system. Sustainable Computing: Informatics and Systems, 2022, 33, 100622.	1.6	25
68	HKn-RVEA: a novel many-objective evolutionary algorithm for car side impact bar crashworthiness problem. International Journal of Vehicle Design, 2019, 80, 257.	0.1	24
69	An Approach for Thoracic Syndrome Classification with Convolutional Neural Networks. Computational and Mathematical Methods in Medicine, 2021, 2021, 1-10.	0.7	23
70	An IoT and Blockchain-based approach for the smart water management system in agriculture. Expert Systems, 2023, 40, e12892.	2.9	23
71	Smart-Hydroponic-Based Framework for Saffron Cultivation: A Precision Smart Agriculture Perspective. Sustainability, 2022, 14, 1120.	1.6	23
72	Recognition of Gurmukhi Handwritten City Names Using Deep Learning and Cloud Computing. Scientific Programming, 2022, 2022, 1-16.	0.5	23

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73	A hybrid fuzzy quantum time series and linear programming model: Special application on TAIEX index dataset. <i>Modern Physics Letters A</i> , 2019, 34, 1950201.	0.5	22
74	DHIMAN: A novel algorithm for economic Dispatch problem based on optimization method using Monte Carlo simulation and Astrophysics concepts. <i>Modern Physics Letters A</i> , 2019, 34, 1950032.	0.5	22
75	Evaluation of Ergonomics-Related Disorders in Online Education Using Fuzzy AHP. <i>Computational Intelligence and Neuroscience</i> , 2021, 2021, 1-11.	1.1	22
76	Artificial intelligence based grid connected inverters for power quality improvement in smart grid applications. <i>Computers and Electrical Engineering</i> , 2021, 93, 107208.	3.0	21
77	A DRL-Based Service Offloading Approach Using DAG for Edge Computational Orchestration. <i>IEEE Transactions on Computational Social Systems</i> , 2024, , 1-9.	3.2	21
78	SHANN: an IoT and machine-learning-assisted edge cross-layered routing protocol using spotted hyena optimizer. <i>Complex &amp; Intelligent Systems</i> , 2022, 8, 3779-3787.	4.0	20
79	Fog-centric IoT based smart healthcare support service for monitoring and controlling an epidemic of Swine Flu virus. <i>Informatics in Medicine Unlocked</i> , 2021, 26, 100636.	1.9	19
80	Computer Vision-Enabled Character Recognition of Hand Gestures for Patients with Hearing and Speaking Disability. <i>Mobile Information Systems</i> , 2021, 2021, 1-10.	0.4	19
81	Building trust of Blockchain-based Internet-of-Thing services using public key infrastructure. <i>Enterprise Information Systems</i> , 2022, 16, .	3.3	19
82	Line Monitoring and Identification Based on Roadmap Towards Edge Computing. <i>Wireless Personal Communications</i> , 2022, 127, 441-464.	1.8	18
83	Denial-of-Service Attack Detection over IPv6 Network Based on KNN Algorithm. <i>Wireless Communications and Mobile Computing</i> , 2021, 2021, 1-6.	0.8	18
84	Dynamic Power Management Using Machine Learning. <i>IEEE/ACM International Conference on Computer-Aided Design, Digest of Technical Papers</i> , 2006, , .	0.0	17
85	Design of a novel energy efficient routing framework for Wireless Nanosensor Networks. , 2018, , .		17
86	A Fog-Cluster Based Load-Balancing Technique. <i>Sustainability</i> , 2022, 14, 7961.	1.6	17
87	Predicting the Death Rate Around the World Due to COVID-19 Using Regression Analysis. <i>International Journal of Swarm Intelligence Research</i> , 2021, 13, 1-13.	0.5	16
88	Futuristic Cyber-Twin Architecture for 6G Technology to Support Internet of Everything. <i>Scientific Programming</i> , 2021, 2021, 1-7.	0.5	16
89	A novel cluster head selection using Hybrid Artificial Bee Colony and Firefly Algorithm for network lifetime and stability in WSNs. <i>Connection Science</i> , 2022, 34, 387-408.	1.8	16
90	Appositeness of Optimized and Reliable Machine Learning for Healthcare: A Survey. <i>Archives of Computational Methods in Engineering</i> , 2022, 29, 3981-4003.	6.0	16

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91	A Novel Ensemble-based Classifier for Detecting the COVID-19 Disease for Infected Patients. Information Systems Frontiers, 2021, 23, 1385-1401.	4.1	15
92	Urban Rain Flood Ecosystem Design Planning and Feasibility Study for the Enrichment of Smart Cities. Sustainability, 2021, 13, 5205.	1.6	15
93	Energy-Effective and Secure Data Transfer Scheme for Mobile Nodes in Smart City Applications. Wireless Personal Communications, 2022, 127, 2041-2061.	1.8	15
94	Cooperative spectrum sensing optimization for cognitive radio in 6G networks. Computers and Electrical Engineering, 2021, 95, 107378.	3.0	15
95	<scp>BOSS</scp>: A new <scp>QoS</scp> aware blockchain assisted framework for secure and smart healthcare as a service. Expert Systems, 2023, 40, e12838.	2.9	15
96	HSSAHHO: a novel hybrid Salp Swarm-Harris Hawks optimization algorithm for complex engineering problems. Journal of Ambient Intelligence and Humanized Computing, 2023, 14, 11569-11605.	3.3	15
97	Online learning in COVID-19 pandemic: an empirical study of Indian and Turkish higher education institutions. World Journal of Engineering, 2022, 19, 58-71.	1.0	14
98	Requirements for the Optimal Design for the Metasystematic Sustainability of Digital Double-Form Systems. Mathematical Problems in Engineering, 2021, 2021, 1-10.	0.6	14
99	A Novel Blockchain and Bi-Linear Polynomial-Based QCP-ABE Framework for Privacy and Security over the Complex Cloud Data. Sensors, 2021, 21, 7300.	2.1	13
100	Velocity clamping-assisted adaptive salp swarm algorithm: balance analysis and case studies. Mathematical Biosciences and Engineering, 2022, 19, 7756-7804.	1.0	13
101	A Review on Machine-learning Based Code Smell Detection Techniques in Object-oriented Software System(s). Recent Advances in Electrical and Electronic Engineering, 2021, 14, 290-303.	0.2	12
102	A range-free localization algorithm for IoT networks. International Journal of Intelligent Systems, 2022, 37, 10336-10379.	3.3	12
103	The Application of Convolutional Neural Network Model in Diagnosis and Nursing of MR Imaging in Alzheimer's Disease. Interdisciplinary Sciences, Computational Life Sciences, 2022, 14, 34-44.	2.2	12
104	Photo voltaic integrated multilevel inverter based hybrid filter using spotted hyena optimizer. Computers and Electrical Engineering, 2021, 96, 107510.	3.0	12
105	A novel approach to optimize the production cost of railway coaches of India using situational-based composite triangular and trapezoidal fuzzy LPP models. Complex & Intelligent Systems, 2021, 7, 2053.	4.0	11
106	Service Workflow: State-of-the-Art and Future Trends. IEEE Transactions on Services Computing, 2023, 16, 757-772.	3.2	11
107	Performance Analysis of WOFDM-WiMAX Integrating Diverse Wavelets for 5G Applications. Wireless Communications and Mobile Computing, 2021, 2021, 1-14.	0.8	11
108	Enhanced Virtualization-Based Dynamic Bin-Packing Optimized Energy Management Solution for Heterogeneous Clouds. Mathematical Problems in Engineering, 2022, 2022, 1-11.	0.6	11



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109	The Effects of Coronavirus (COVID-19) on the Psychological Health of Indian Poultry Farmers. <i>Coronaviruses</i> , 2021, 2, 131-132.	0.2	10
110	Scalable and Storage Efficient Dynamic Key Management Scheme for Wireless Sensor Network. <i>Wireless Communications and Mobile Computing</i> , 2021, 2021, 1-11.	0.8	10
111	The Architecture, Classification, and Unsolved Research Issues of Big Data extraction as well as decomposing the Internet of Vehicles (IoV). , 2021, , .		10
112	A Personalized Eccentric Cyber-Physical System Architecture for Smart Healthcare. <i>Security and Communication Networks</i> , 2021, 2021, 1-36.	1.0	10
113	A PSO Enable Multi-Hop Clustering Algorithm for VANET. <i>International Journal of Swarm Intelligence Research</i> , 2021, 13, 1-14.	0.5	9
114	An Innovative Approach for Face Recognition Using Raspberry Pi. <i>Artificial Intelligence Evolution</i> , 0, , 102-107.	0.0	9
115	Deep learningâ€influenced joint vehicleâ€toâ€infrastructure and vehicleâ€toâ€vehicle communication approach for internet of vehicles. <i>Expert Systems</i> , 2022, 39, e12815.	2.9	9
116	Task Scheduling in Cloud Using ACO. <i>Recent Advances in Computer Science and Communications</i> , 2022, 15, .	0.5	9
117	The Identification Nanoparticle Sensor Using Back Propagation Neural Network Optimized by Genetic Algorithm. <i>Journal of Sensors</i> , 2021, 2021, 1-12.	0.6	9
118	Multimedia Concepts on Object Detection and Recognition with F1 Car Simulation Using Convolutional Layers. <i>Wireless Communications and Mobile Computing</i> , 2021, 2021, 1-21.	0.8	9
119	Optimization of Ultrasound Information Imaging Algorithm in Cardiovascular Disease Based on Image Enhancement. <i>Mathematical Problems in Engineering</i> , 2021, 2021, 1-13.	0.6	8
120	Mobile Networks-on-Chip Mapping Algorithms for Optimization of Latency and Energy Consumption. <i>Mobile Networks and Applications</i> , 2022, 27, 637-651.	2.2	8
121	An improved exponential metric space approach for <scp>Câ€mean</scp> clustering analysing. <i>Expert Systems</i> , 0, , e12896.	2.9	8
122	Enhanced emperor penguin optimization algorithm for dynamic economic dispatch with renewable energy sources and microgrid. <i>Journal of Intelligent and Fuzzy Systems</i> , 2021, 40, 9041-9058.	0.8	7
123	A soft computing based multi-objective optimization approach for automatic prediction of software cost models. <i>Applied Soft Computing Journal</i> , 2021, 113, 107981.	4.1	7
124	Real time video summarizing using image semantic segmentation for CBVR. <i>Journal of Real-Time Image Processing</i> , 2021, 18, 1827-1836.	2.2	6
125	Guest Editorial: Cybertwin-Driven 6G for Internet of Everything: Architectures, Challenges, and Industrial Applications. <i>IEEE Transactions on Industrial Informatics</i> , 2022, 18, 4846-4849.	7.2	4
126	Hysteretic controlled Inter-leaved buck â€“Converter based AC-DC Micro-grid system with enhanced response. <i>Materials Today: Proceedings</i> , 2021, , .	0.9	3



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127	HKn-RVEA: a novel many-objective evolutionary algorithm for car side impact bar crashworthiness problem. <i>International Journal of Vehicle Design</i> , 2019, 80, 257.	0.1	3
128	iTSA: an improved Tunicate Swarm Algorithm for defensive resource assignment problem. <i>Soft Computing</i> , 2022, 26, 4929-4937.	2.1	3
129	A short survey of co-builders web framework. <i>Materials Today: Proceedings</i> , 2021, , .	0.9	2
130	Task Scheduling in Cloud Computing Using Spotted Hyena Optimizer. <i>Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series</i> , 2021, , 136-149.	0.5	2
131	A Novel Resource Allocation and Scheduling Based on Priority Using Metaheuristic for Cloud Computing Environment. <i>Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series</i> , 2021, , 113-134.	0.5	2
132	Novel Big Data Networking Framework Using Multihoming Optimization for Distributed Stream Computing. <i>Wireless Communications and Mobile Computing</i> , 2022, 2022, 1-11.	0.8	2
133	Job Scheduling in Cloud Using Seagull Optimization Algorithm. <i>Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series</i> , 2021, , 27-40.	0.5	1
134	A Novel Technique on Autism Spectrum Disorders Using Classification Techniques. <i>Advances in Medical Diagnosis, Treatment, and Care</i> , 2021, , 40-53.	0.1	1
135	Special Issue on Computational Approaches for COVID-19 Disease Medical Image Analysis. <i>Current Medical Imaging</i> , 2022, 18, 103-103.	0.4	1
136	Fuzzy Alexandroff soft topological spaces. <i>Materials Today: Proceedings</i> , 2021, , .	0.9	0