

Algorithms for Intelligent Systems

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Anupam Yadav

Satyasai Jagannath Nanda

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Proceedings of International Conference on Paradigms of Communication, Computing and Data Analytics

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Algorithms for Intelligent Systems

Series Editors

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Anupam Yadav · Satyasai Jagannath Nanda ·
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Preface

This book contains outstanding research papers as the proceedings of the International Conference on Paradigms of Communication, Computing and Data Analytics (PCCDA 2023). PCCDA 2023 has been organized by Dr. Akhilesh Das Gupta, Institute of Technology and Management, Delhi, India, and technically sponsored by Soft Computing Research Society, India. The conference is conceived as a platform for disseminating and exchanging ideas, concepts and results of researchers from academia and industry to develop a comprehensive understanding of the challenges of the advancements of intelligence in computational viewpoints. This book will help in strengthening congenial networking between academia and industry. We have tried our best to enrich the quality of the PCCDA 2023 through the stringent and careful peer-review process. This book presents novel contributions to Communication, Computing and Data Analytics and serves as reference material for advanced research. PCCDA 2023 received many technical contributed articles from distinguished participants from home and abroad. After a very stringent peer-reviewing process, only 68 high-quality papers were finally accepted for presentation and the final proceedings.

Jalandhar, India
Jaipur, India
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Anupam Yadav
Satyasai Jagannath Nanda
Meng-Hiot Lim

Contents

1	Philosophical Review of Artificial Intelligence for Society 5.0	1
	Ggaliwango Marvin, Micheal Tamale, Benjamin Kanagwa, and Daudi Jjingo	
2	A Review of Different Approaches for Emotion Detection Based on Facial Expression Recognition	17
	Sonu Mittal, Kamal Parashar, Priyanshu Belwal, and Tushar Gahlaut	
3	The Long Short-Term Memory Tuning for Multi-step Ahead Wind Energy Forecasting Using Enhanced Sine Cosine Algorithm and Variation Mode Decomposition	31
	Mohamed Salb, Luka Jovanovic, Nebojsa Bacanin, Goran Kunjadic, Milos Antonijevic, Miodrag Zivkovic, and V. Kanchana Devi	
4	Design of Traffic Monitoring System by Greedy Perimeter Stateless Routing Protocol	45
	Movva Ganesh Kasyap, Arepalli Gayathri, Yaram Chandana, Vadithe Venkatesh Naik, and Yaddanapudi Sarada Devi	
5	Crop-Weed Detection, Depth Estimation and Disease Diagnosis Using YOLO and Darknet for Agribot: A Precision Farming Robot	57
	Medha Wyawahare, Jyoti Madake, Agnibha Sarkar, Anish Parkhe, Archis Khuspe, and Tejas Gaikwad	
6	Audio Classification of Emergency Vehicle Sirens Using Recurrent Neural Network Architectures	71
	Arya Shah, Amanpreet Singh, and Artika Singh	
7	Assessment of Variable Threshold for Anomaly Detection in ECG Time Signals with Deep Learning	85
	Biraja Mishra and Rajeev Kumar	

8	Green Cloud Computing: Achieving Sustainability Through Energy-Efficient Techniques, Architectures, and Addressing Research Challenges	97
	Sneha, Prabhdeep Singh, and Vikas Tripathi	
9	AI-Based Smart Dashboard for Electric Vehicles	107
	Narayana Darapaneni, Anwesh Reddy Paduri, B. G. Sudha, Dilip Kumar Mohapatra, Ghanshyam Ji, Mrudul George, and N. Swathi	
10	Solving Systems of Nonlinear Equations Using Jaya and Jaya-Based Algorithms: A Computational Comparison	119
	Sérgio Ribeiro, Bruno Silva, and Luiz Guerreiro Lopes	
11	In-Depth Analysis of Artificial Intelligence in Mammography for Breast Cancer Detection	137
	Shweta Saraswat, Bright Keswani, and Vrishit Saraswat	
12	The Task Allocation to Virtual Machines on Dynamic Load Balancing in Cloud Environments	145
	Rudresh Shah and Suresh Jain	
13	Ensemble of Supervised Machine Learning Models for Cardiovascular Disease Prediction	157
	Archi Agrawal, Dinesh Singh, Charul Dewan, and Shipra Varshney	
14	Computing Model for Real-Time Online Fraudulent Identification	167
	Ramani Jaydeep Ramniklal and Jayesh N. Zalavadia	
15	Ontology and Machine Learning: A Two-Way Street to Improved Knowledge Representation and Algorithm Accuracy	181
	Leila Zemmouchi-Ghomari	
16	Nonmetaheuristic Methods for Group Leader Selection, Cluster Formation and Routing Techniques for WSNs: A Review	191
	Kumar Dayanand, Binod Kumar, Barkha Kumari, Mohit Kumar, and Kumar Arvind	
17	A Comprehensive Review of Machine Learning-Based Approaches to Detect Crop Diseases	203
	Rajesh Kumar and Vikram Singh	
18	Physiological Signals for Emotion Recognition	221
	Shruti G. Taley and M. A. Pund	

19	Visual HOG-Enabled Deep ResiNet for Crime Scene Object Detection	233
	T. J. Nandhini and K. Thinakaran	
20	Scheming of Diamond Ring Harvester for Low-Powered IoT Devices	245
	Shruti Taksali and Amruta Lipare	
21	Smart Computer Commands Using Gesture Recognition	253
	Sonali Patil, Chinmay Shyam Mukhedker, Mukul Sanjay Chaudhari, Jaspreetsingh Kulwindarsingh Pannu, and Varun Prasannan	
22	A New Software Approach to Automated Translation (On the Example of the Logistics Sublanguage)	263
	Rodmonga Potapova, Vsevolod Potapov, and Oleg Kuzmin	
23	Recent Advances in the Index Calculus Method for Solving the ECDLP	275
	Aayush Jindal, Aman Jatain, and Shalini Bhaskar Bajaj	
24	Pedestrian Detection Using YOLOv5 and Complete-IoU Loss for Autonomous Driving Applications	287
	E. Raja Vikram Reddy and Sushil Thale	
25	Health Ware—A New Generation Smart Healthcare System	297
	Nihar Ranjan, Maya Shelke, and Gitanjali Mate	
26	EEG-Based Sleep Stage Classification System	311
	Medha Wyawahare, Rohan Bhole, Vaibhavi Bobade, Akshay Chavan, and Shreya Dehankar	
27	FLoRSA: Fuzzy Logic-Oriented Resource Scheduling Algorithm in IaaS Cloud	323
	Kapil Tarey and Vivek Shrivastava	
28	Real-Time Audio Communication Using WebRTC and MERN Stack	335
	Soham Sattigeri and Shripad Bhatlawande	
29	Ego Network Analysis Using Machine Learning Algorithms	343
	S. Vaibhav, M. P. Dhananjay Kumar, Tejashwini Hosamani, Vrunda Patil, and S. Natarajan	
30	Brain Tumor Detection and Classification	353
	K. R. Roopa, Sainath Sindagikar, Pruthvi G. Kalkod, P. M. Vishnu, and Lata	
31	Safe Vote—Fraudulent Vote Prevention System	363
	Neethu Chandrasekhar, Arjun B. Nair, Avinash Thomas George, Binitta Varghese, and Diya Anna Thomas	

32	Intelligent Framework for Early Prediction of Diabetic Retinopathy: A Deep Learning Approach	377
	Adil Husain Rather and Inam Ul Haq	
33	Advanced Footstep Piezoelectric Power Generation for Mobile Charging Using RFID	389
	Kiran Ingale, Atharva Jivtode, Sakshi Bandgar, Ayush Biyani, and Vedant Chaware	
34	Radial Distribution Networks Reconfiguration with Allocation of DG Using Quasi-Oppositional Moth Flame Optimization	401
	Sneha Sultana, Sourav Paul, Poulomi Acharya, Pronoy Das Choudhury, and Provas Kumar Roy	
35	Recent Trends in Risk Assessment of Electromagnetic Radiations	415
	Juhi Pruthi and Ashutosh Dixit	
36	RGB and Thermal Image Analysis for Marble Crack Detection with Deep Learning	427
	Eleni Vrochidou, George K. Sidiropoulos, Athanasios G. Ouzounis, Ioannis Tsimperidis, Ilias T. Sarafis, Vassilis Kalpakis, Andreas Stamkos, and George A. Papakostas	
37	Rover with Obstacle Avoidance Using Image Processing	439
	Krishneel Sharma, Krishan P. Singh, Bhavish P. Gulabdas, Shahil Kumar, Sheikh Izzal Azid, and Rahul Ranjeev Kumar	
38	A Systematic Literature Review of Network Intrusion Detection System Models	453
	Yogesh and Lalit Mohan Goyal	
39	A Comprehensive Study on Online and Offline Evaluation of Recommendation System	469
	Tamanna Sachdeva, Lalit Mohan Goyal, and Mamta Mittal	
40	Autonomous Delivery Vehicle Using Raspberry Pi and Computer Vision	481
	Vijay Ravindran, S. Chandrika, Ram Prakash Ponraj, C. Krishnakumar, S. Devadharshini, and S. Lakshmi	
41	Standard Plane Classification of Fetal Brain Ultrasound Images	495
	Jasmin Shanavas and G. Kanjana	
42	Panoramic Radiograph Segmentation Using U-Net with MobileNet V2 Encoder	509
	Suvarna Bhat and Gajanan K. Birajdar	

43 Molecular Recognition and Feature Extraction System 523
 Dannerick Elisha, Jimson Sanau, Mansour H. Assaf,
 Rahul R. Kumar, Bibhya Sharma, and Ronesh Sharma

44 Object Recognition with Voice Assistant for Visually Impaired 537
 Deepanshu Jain, Isha Nailwal, Arica Ranjan, and Sonu Mittal

45 Emotion Recognition-Based Emoji Retrieval 547
 P. Parvathi Sreyani, Kandula Rakshitha, Nasalai Sanjana,
 Yeddula Greeshma, and Ashwini M. Joshi

**46 An Outage Probability-Based RAW Station Grouping
 for IEEE 802.11ah IoT Networks** 559
 Md. Arifuzzaman Mondal and Md. Iftekhar Hussain

**47 Machine Learning Algorithms and Grid Search Cross
 Validation: A Novel Approach for Diabetes Detection** 571
 Vishal V. Mahale, Ashish G. Nandre, Mahesh V. Korade,
 and Neha R. Hiray

**48 Environment Mapping Using Ultrasonic Sensor for Obstacle
 Detection and Navigation** 583
 Medha Wyawahare, Aditya Shirude, Akshara Amrutkar,
 Anurag Landge, and Ashfan Khan

**49 Identification and Classification of Skin Diseases
 with Erythema Using YOLO Algorithm** 595
 C. Santhosh Kumar, K. Amritha Devangana, P. L. Abirami,
 M. Prasanna, and S. Hari Aravind

50 PSO-Based Controller for LFC of Deregulated Power System 607
 Dharmendra Jain, M. K. Bhaskar, and Manish Parihar

**51 Solar Maximum Power Point Tracking and Machine
 Learning-Based Forecasting** 625
 Akshay Pandya, Galav Bhatt, Jash Patadia, and Het Patel

**52 Comparative Performance Analysis of Various Controllers
 for Quadruple Tank System** 639
 C. Praveen Kumar and K. Ayyar

53 Supervised Machine Learning Text Classification: A Review 651
 Nisar Ahmad Kangoo and Apash Roy

54 Train Delay Prediction Using Machine Learning 663
 Nilesh N. Dawale and Sunita Nandgave

55 Logical Formalization for a HMDCS-UV 675
 Salima Bella and Ghalem Belalem

56 SANKET—A Vision Beyond Gestures 689
 Isha Gawde, Jisha Philip, Kanaiya Kanabar, Shilpa Tholar,
 and Shalu Chopra

**57 Assessing the Effectiveness of Different Mass Communication
 Approaches Used for Government Medical Programs in Rural
 Areas of Uttarakhand** 699
 Pradeep Joshi, Omdeep Gupta, Mayank Pant, Kartikeya Raina,
 and Bhanu Sharma

**58 Computer Vision-Based Virtual Mouse Cursor Using Hand
 Gesture** 713
 Tanmay Sonawane, Sarvesh Waghmare, Abhishek Dongare,
 Avadhut Joshi, and Anandkumar Birajdar

**59 A Review of Machine Learning Models for Disease Prediction
 in Poultry Chickens** 723
 Divya Verma, Neelam Goel, and Vivek Kumar Garg

**60 Technological Approach Toward Smart Grid Security:
 A Review** 739
 Saish Kothawade, Akshat Dubey, Anush Shetty,
 Kartik Chaudhari, and Rachana Patil

**61 Storage and Verification of Medical Records Using
 Blockchain, Decentralized Storage, and NFTs** 753
 Shubham Thakur and Vijay Kumar Chahar

**62 A Study on Prediction of Temperature in Metropolitan Cities
 Using Machine Learning** 769
 Shweta S. Aladakatti, A. Bharath, V. T. Adarsha, B. J. Ajith,
 and H. R. Chaithra

**63 A Review of Secure Authentication Techniques in Fog
 Computing** 783
 Mahgul Afzali and Gagandeep

64 SafeMaps: Crime Index-Based Urban Route Prediction 793
 Ria Singh, Shatakshi Mohan, Harsh Pooniwala, V. V. Gokul,
 and S. Shilpa

**65 Controlling the Steering Wheel Using Deep Reinforcement
 Learning: A Survey** 805
 Narayana Darapaneni, Anwesh Reddy Paduri, B.G. Sudha,
 Vidyadhar Bendre, Midhun Chandran, M. Mohana Priya,
 and Varghese Jacob

66 NL2SQL: Rule-Based Model for Natural Language to SQL 817
 Kevin Tony, Kripa Susan Shaji, Nijo Noble,
 Ruben Joseph Devasia, and Neethu Chandrasekhar

67 VANET-Based Communication in Vehicles to Control Accidents Using an Efficient Routing Strategy 829
Humera Maahin, Deepthi Kondamuri, Sarvani Polisetty, and Sarada Devi Yaddanapudi

68 ECG Image Classification for Arrhythmia Using Deep Learning 839
Shasmita Nair, Prerna Peswani, Jai Rohra, and M. Vijayalakshmi

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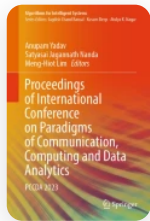
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Radial Distribution Networks Reconfiguration with Allocation of DG Using Quasi-Oppositional Moth Flame Optimization

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Abstract

This research aims to reconfigure radial distribution networks in presence of distributed generators (DGs) using the quasi-oppositional moth flame optimization (QOMFO) method in order to minimize power losses in the power system network and maintain a constant voltage profile throughout the power system network, which will aid in increasing system efficiency. The primary goal is to demonstrate the proper placement of distributed generators (DGs) in the radial distribution network, as well as the reconfiguration and installation of DGs in the radial distribution network. The primary benefit of this algorithm is continuous guiding search with changing goal, which can be used for real-time applications with only minor adjustments because the power from distributed generation is constantly changing. This algorithm has been tested for loss minimization on a standard 33 and 69 bus radial distribution systems, and the results show that it is efficient and suitable for real-time applications.

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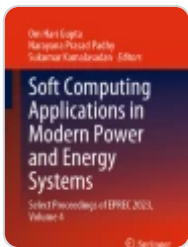
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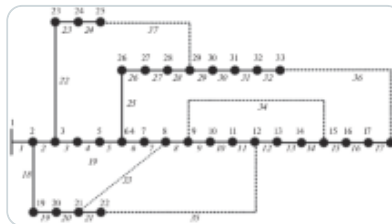
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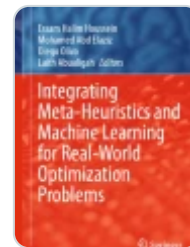
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References

1. Tabares A, Puerta GF, Franco JF, Romero RA (2021) Planning of reserve branches to increase reconfiguration capability in distribution systems: a scenario-based convex programming approach. IEEE Access 9:104707–104721

[Google Scholar](#)

2. Gao Yuanqi, Wang Wei, Shi Jie, Nanpeng Yu (2020) Batch-constrained reinforcement learning for dynamic distribution network reconfiguration. IEEE Trans Smart Grid 11(6):5357–5369

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3. Akbari MA, Aghaei J, Barani M, Niknam T, Ghavidel S, Farahmand H, Korpas M, Li L (2018) Convex models for optimal utility-based distributed generation allocation in radial distribution systems. IEEE Syst J 12(4):3497–3508

[Google Scholar](#)

4. Shaheen Abdullah, Elsayed Abdallah, Ginidi Ahmed, El-Sehiemy Ragab, Elattar Ehab (2022) Reconfiguration of electrical distribution network-based dg and capacitors allocations using artificial ecosystem optimizer: practical case study. Alexandria Eng J 61(8):6105–6118

[Article](#) [Google Scholar](#)

5. Tan S, Xu J-X, Panda SK (2013) Optimization of distribution network incorporating distributed generators: an integrated approach. IEEE Trans Power Syst 28(3):2421–2432

[Google Scholar](#)

6. Srinivasa Rao R, Ravindra K, Satish K, Narasimham SVL (2012) Power loss minimization in distribution system using network reconfiguration in the presence of distributed generation. IEEE Trans Power Syst 28(1):317–325
[Google Scholar](#)
7. Mohamed Imran A, Kowsalya M, Kothari DP (2014) A novel integration technique for optimal network reconfiguration and distributed generation placement in power distribution networks. Int J Electric Power Energy Syst 63:461–472
[Google Scholar](#)
8. Merlin A (1975) Search for a minimum-loss operating spanning tree configuration for an urban power distribution system. In: Proceedings of 5th PSCC, vol 1. pp 1–18
[Google Scholar](#)
9. Shirmohammadi D, Wayne Hong H (1989) Reconfiguration of electric distribution networks for resistive line losses reduction. IEEE Trans Power Delivery 4(2):1492–1498
[Google Scholar](#)
10. Civanlar S, Grainger JJ, Yin H, Lee SSH (1988) Distribution feeder reconfiguration for loss reduction. IEEE Trans Power Delivery 3(3):1217–1223
[Google Scholar](#)
11. Georgilakis PS, Hatziargyriou ND (2013) Optimal distributed generation placement in power distribution networks: models, methods, and future research. IEEE Trans Power Syst 28(3):3420–3428
[Google Scholar](#)

12. Sultana S, Roy PK (2016) Oppositional krill herd algorithm for optimal location of capacitor with reconfiguration in radial distribution system. *Int J Electri Power Energy Syst* 4:78–90

[Google Scholar](#)

13. Biswal SR, Shankar G, Elavarasan RM, Mihet-Popa L (2021) Optimal allocation/sizing of dgs/capacitors in reconfigured radial distribution system using quasi-reflected slime mould algorithm. *IEEE Access* 9:125658–125677

[Google Scholar](#)

14. Barnwal AK, Yadav LK, Verma MK (2022) A multi-objective approach for voltage stability enhancement and loss reduction under pqv and p buses through reconfiguration and distributed generation allocation. *IEEE Access* 10:16609–16623

[Google Scholar](#)

15. Tran TV, Truong B-H, Nguyen TP, Nguyen TA, Duong TL, Vo DN (2021) Reconfiguration of distribution networks with distributed generations using an improved neural network algorithm. *IEEE Access* 9:165618–165647

[Google Scholar](#)

16. Mirjalili Seyedali (2015) Moth-flame optimization algorithm: a novel nature-inspired heuristic paradigm. *Knowledge-based Syst* 89:228–249

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17. Tizhoosh HR (2005) Opposition-based learning: a new scheme for machine intelligence. In: *International conference on computational intelligence for modelling,*

control and automation and international conference on intelligent agents, web technologies and internet commerce (CIMCA-IAWTIC'06), vol 1. IEEE, pp 695–701

[Google Scholar](#)

18. Kashem MA, Ganapathy V, Jasmon GB, Buhari MI (2000) A novel method for loss minimization in distribution networks. In: DRPT2000. International conference on electric utility deregulation and restructuring and power technologies. Proceedings (Cat. No. 00EX382), IEEE, pp 251–256

[Google Scholar](#)

19. Tran TT, Truong KH, Vo DN (2020) Stochastic fractal search algorithm for reconfiguration of distribution networks with distributed generations. Ain Shams Eng J 11(2):389–407

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