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Publications

Journals:

1. Dipak K. Sah, N. Mazumdar, Abhishek Hazra, Tarachand Amgoth, "An Efficient Scheduling Approach for Target Coverage in Solar Powered Internet of Things", **IEEE Transactions on Sustainable Computing: Accepted**, 2025.
2. M Mallikarjuna and Tarachand Amgoth, "Energy-Aware Unified Data Collection and Energy Replenishment in Consumer Mobile WSNs", **IEEE Transactions on Consumer Electronics: Accepted**, 2025.
3. A Sai V. Rao, Tarachand Amgoth, and Ansuman Bhattacharya, "Chronological Archery Algorithm for Image Compression Using Compressive Sensing in IoT-LTE System", **IEEE Transactions on Consumer Electronics: Accepted**, 2024.
4. Abhishek Hazra, M. Adhikari, Dipak K. Sah, Tarachand Amgoth, "Fair Scheduling and Computation Co-Offloading for Industrial Applications in Fog Networks", **IEEE Transactions on Networking and Service Management**, Vol. 21, pp. 1867-1876, 2024.
5. A. Sai V. Rao, P. K. Roy, Tarachand Amgoth, Ansuman Bhattacharya, "A deep learning-based authentication protocol for IoT-enabled LTE systems", **Future Generation Computer System (Elsevier)**, Vol. 154, pp. 451-464, 2024.
6. A. Sai V, Rao, S. Kainth, A. Bhattacharya, Tarachand Amgoth, "An efficient weapon detection system using NSGCU-DCNN classifier in surveillance", **Expert System with Applications (Elsevier)**, Vol. 255, 2024.
7. Abhishek Hazra and Tarachand Amgoth, Correct title: CeCO: Cost-Efficient Computation Offloading of IoT Applications in Green Industrial Fog Networks, **IEEE Transactions on Industrial Informatics**, Vol. 9, pp. 6255 - 6263, 2022.
8. Abishek Hazra, Praveen Kumar D., Tarachand Amgoth, and Schahram Dustdar, "Cooperative Transmission Scheduling and Computation Offloading with Collaboration of Fog and Cloud for Industrial IoT Applications", **IEEE Internet of Things Journal**, Vol. 10, pp. 3944 - 3953, 2023.
9. Abishek Hazra, Tarachand Amgoth, Mainak Adhikari, and Satish Srirama Narayana, "A Comprehensive Survey on Interoperability for Industrial IoT: Taxonomy, Standards and Future Directions", **ACM Computing Surveys**, Vol. 55, pp. 9:1 - 9:35, 2023.
10. Abishek and Tarachand Amgoth, Mainak Adhikari, Satish Srirama Narayana, "Collaborative AI-enabled Intelligent Partial Service Provisioning in Green Industrial Fog Networks ", **IEEE Internet of Things Journal**, Vol. 10, pp. 2913 - 2921, 2023.
11. Dinesh Kumar Sah, Korhan Cengiz, and Tarachand Amgoth, "3D Localization and Error Minimization in Underwater Sensor Networks", **ACM Transactions on Sensor Networks**, Vol. 18, pp. 1 - 25, 2022.

12. Abhishek Hazra, Mainak Adhikari, and Tarachand Amgoth, "Intelligent Service Deployment Policy for Next-Generation Industrial Edge Networks.", **IEEE Transactions on Network Science and Engineering**, Vol. 9, pp. 3057 - 3066, 2022.
13. Abhishek Hazra, Tarachand Amgoth, Mainak Adhikari, and Satish Narayana Srirama, "Stackelberg Game for Service Deployment in 6G-aware Fog Networks", **IEEE Internet of Things Journal**, Vol. 8, pp. 5185 - 5193, 2021.
14. Abhishek Hazra, Tarachand Amgoth, Mainak Adhikari, and Satish Narayana Srirama, "Joint Computation Offloading and Scheduling Optimization in IoT-Assisted Fog Networks", **IEEE Transactions on Network Science and Engineering**, Vol. 7, pp. 3266 - 3276, 2021.
15. Praveen Kumar D. and Tarachand Amgoth, "A Survey on Recent Advances in IoT Application Layer Protocols and Scope of Machine Learning for Research Directions", **Digital Communication and Networks (Elsevier)**, Vol. 8, pp. 927 - 744, 2022.
16. Biswa Mohan Sahoo, Hari Mohan Pandey, and Tarachand Amgoth, "A Genetic Algorithm Inspired Optimized Cluster Head Selection Method in Wireless Sensor Network", **Swarm and Evolutionary Computation (Elsevier)**, Vol. 75, pp. 101151, 2022.
17. Dinesh Kumar Sah and Tarachand Amgoth, "Energy Efficient Medium Access Control Protocol for Data Collection in Wireless Sensor Network: A Q-learning approach", **Sustainable Energy Technologies and Assessments (Elsevier)**, Vol. 53, pp. 102530, 2022.
18. Dinesh K Sah, Tarachand Amgoth, K Cengiz, Yasser Alshehri, and Noha Alnazzawi, "TDMA policy to optimize resource utilization in Wireless Sensor Networks using reinforcement learning for ambient environment", **Computer Communications (Elsevier)**, Vol. 195, pp. 162 - 172, 2022.
19. Ramesh Kumar and Tarachand Amgoth, "Reinforcement learning based connectivity restoration in wireless sensor networks", **Applied Intelligence**, Vol. 52, pp. 13214 - 13231, 2022.
20. Praveen Kumar D., Tarachand Amgoth, and A.C.S. Rao, "Delay-aware Data Fusion in Duty-Cycled Wireless Sensor Networks: A Q-learning Approach", **Sustainable computing (Elsevier)**, Vol. 33, pp. 100642, 2022.
21. Mainak Adhikari, Tarachand Amgoth, and Satish Narayana Srirama, "Application Offloading Strategy for Hierarchical Fog Environment through Swarm Optimization", **IEEE Internet of Things Journal**, Vol. 7, pp. 4317 - 4328, 2020.
22. Dipak Kumar Sah and Tarachand Amgoth, "Renewable Energy Harvesting Schemes in Wireless Sensor Networks: A Survey", **Information Fusion (Elsevier)**, Vol. 63, pp. 223 - 247, 2020.
23. Biswa Mohan Sahoo, Hari Mohan Pandey, and Tarachand Amgoth, "GAPSO-H: A Hybrid Approach Towards Optimizing the Cluster Based Routing in Wireless Sensor Network", **Swarm and Evolutionary Computation (Elsevier)**, Vol. 60, pp. 100772, 2021.
24. Sanjai Prasada Rao Banoth, Praveen Kumar D., and Tarachand Amgoth, "Dynamic mobile charger scheduling with partial charging strategy for WSNs using deep-Q-networks", **Neural Computing and Applications**, Vol. 22, pp. 15267 - 15279, 2021.
25. Biswa Mohan Sahoo, Tarachand Amgoth, and Hari Mohan Pandey, "Particle Swarm Optimization Based Energy Efficient Clustering and Sink Mobility in Heterogeneous Wireless Sensor Network", **Ad Hoc Networks (Elsevier)**, Vol. 106, pp. 102237, 2020.

26. Mainak Adhikari, Tarachand Amgoth, and Satish Narayana Srirama, "Multi-Objective Scheduling Strategy for Scientific Workflows in Cloud Environment: A Firefly-based Approach", **Applied Soft Computing (Elsevier)**, Vol. 93, pp. 106411, 2020.
27. Praveen Kumar D., Tarachand Amgoth, and Chandra Sekhar Annavarapu, "Machine learning algorithms for wireless sensor networks: A survey", **Information Fusion (Elsevier)**, Vol. 49, pp. 1 - 25, 2019.
28. Mainak Adhikari, Tarachand Amgoth, and Satish Narayana Srirama, "A Survey on Scheduling Strategies for Workflows in Cloud Environment and Emerging Trends", **ACM Computing Survey**, Vol. 52, 2019.
29. Mainak Adhikari and Sudharsan Nandy, and Tarachand Amgoth, "Meta heuristic-based task deployment mechanism for load balancing in IaaS cloud", **Journal of Network and Computer Applications (Elsevier)**, Vol. 128, pp.64-77, 2018.
30. Mainak Adhikari and Tarachand Amgoth, "An intelligent water drops-based workflow scheduling for IaaS cloud", **Applied Soft Computing (Elsevier)**, Vol. 77, pp. 547-566, 2019.
31. Mainak Adhikari and Tarachand Amgoth, "Heuristic-based load balancing algorithm for IaaS cloud", **Future Generation Computing Systems (Elsevier)**, Vol. 81, pp. 156-165, 2018.
32. Praveen Kumar D., Tarachand Amgoth, Chandra Sekhar Annavarapu, "ACO-based mobile sink path determination for wireless sensor networks under non-uniform data constraints", **Applied Soft Computing (Elsevier)**, Vol. 68, pp. 528-540, 2018.
33. Dinesh Kumar Sah and Tarachand Amgoth, "Parametric survey on cross-layer designs for wireless sensor networks", **Computer Science Review (Elsevier)**, Vol. 27, pp. 112-134, 2018.
34. Madnesh K. Gupta and Tarachand Amgoth, "Power and resource-aware virtual machine placement for IaaS cloud", **Sustainable Computing (Elsevier)**, Vol. 19, pp. 50-62, 2018.
35. Dinesh K Sah, K Cengiz, PK Donta, VN Inukollu, Tarachand Amgoth "EDGF: Empirical dataset generation framework for wireless sensor networks", **Computer Communications(Elsevier)**, Vol. 23, pp. 8932 - 8940, 2022.
36. Dipak Kumar Sah and Tarachand Amgoth, "Harvested Energy Prediction Technique for Solar-Powered Wireless Sensor Networks", **IEEE Sensors Journal**, Vol. 22, pp. 8663 - 8671, 2022.
37. Abhishek Hazra, Tarachand Amgoth, M. Adhikari, and Satish Narayana Srirama, "Fog Computing for Energy-efficient Data Offloading of IoT Applications in Industrial Sensor Networks", **IEEE Sensors Journal**, Vol. 22, pp. 8663 - 8671, 2022.
38. Ramesh Kumar, Debjit Das, and Tarachand Amgoth, "Obstacle-aware connectivity establishment in wireless sensor networks", **IEEE Sensors Journal**, Vol. 21, pp. 5543 - 5552, 2020.
39. Praveen Kumar D. B. Sanjai Prasada Rao, Tarachand Amgoth, A.C.S. Rao, and Silpamayee, "Data collection and path determination strategies for mobile sink in 3D WSNs", **IEEE Sensors Journal**, Vol. 20, pp. 2224 - 2233, 2020.
40. Abishek and Tarachand Amgoth, Mainak Adhikari, Satish Srirama Narayana, "Fog Computing for Next-Generation Internet of Things: Architecture, Challenges and Future Trends", **Computer Science Review (Elsevier)**, Vol. 48, pp. 100549, 2023.

41. M. Mallikarjuna and Tarachand Amgoth, "A hybrid charging scheme for efficient operation in wireless sensor network", **Wireless Networks (SpringerNature)**, Vol. 31, pp. 1301 - 1320, 2025.
42. Dipak Kumar Sah and Tarachand Amgoth, "An Energy Efficient Coverage Aware Algorithm in Energy Harvesting Wireless Sensor Networks", **Wireless Networks (SpringerNature)**, Vol. 26, pp. 4723 - 4737, 2020.
43. Madana Srinivas and Tarachand Amgoth, "Data Acquisition in large-scale Wireless Sensor Networks using Multiple Mobile Sinks: A Hierarchical Clustering Approach", **Wireless Networks**, Vol. 28, pp. 603 - 619, 2022.
44. Sanjai Prasada Rao, Praveen Kumar D. and Tarachand Amgoth, "Target-aware distributed coverage and connectivity algorithm for wireless sensor networks", **Wireless Networks (SpringerNature)**, Vol. 29, pp. 1815 - 1830, 2023.
45. Prasannababu and Tarachand Amgoth, "Joint Mobile Wireless Energy Transmitter and Data Collector for Rechargeable Wireless Sensor Networks", **Wireless Networks(SpringerNature)**, Vol. 28, pp. 3563 - 3576, 2022.
46. Praveen Kumar D. B. Sanjai Prasada Rao, Tarachand Amgoth, A.C.S. Rao, and Silpamayee, "Data collection and path determination strategies for mobile sink in 3D WSNs", **IEEE Sensors Journal** , Vol. 20, pp. 2224 - 2233, 2020.
47. Dipak Kumar Sah and Tarachand Amgoth, "A Novel Efficient Clustering Protocol for Energy Harvesting in Wireless Sensor Networks", **Wireless Networks (SpringerNature)**, Vol. 26, pp. 4723 - 4727, 2020.
48. Ramesh Kumar and Tarachand Amgoth, "Adaptive cluster-based relay node placement for disjoint wireless sensor networks", **Wireless Networks (SpringerNature)**, Vol. 26, pp. 651 - 666, 2020.
49. Madnesh K. Gupta and Tarachand Amgoth, "Resource-aware virtual machine placement algorithm for IaaS cloud", **The Journal of Supercomputing (SpringerNature)**, Vol. 74, pp. 122 - 140, 2018.
50. Tarachand Amgoth and Prasanta K. Jana, "Energy-aware routing algorithm for wireless sensor networks", **Computers & Electrical Engineering (Elsevier)**, Vol. 41, pp. 357 - 367, 2015.
51. Mainak Adhikari, Tarachand Amgoth, and Satish Narayana Srirama, "A Comprehensive Survey on Nature-Inspired Algorithms and Their Applications in Edge Computing: Challenges and Future Directions", **Software: Practice and Experience**, Vol. 52, pp. 1004 - 1034, 2022.
52. Praveen Kumar D., Tarachand Amgoth, and S. N. Srirama, "iCoCoA: intelligent congestion control algorithm for CoAP using deep reinforcement learning", **J. of Ambient Intelligence & Humanized Comp.**, Vol. 14, pp. 2951 - 2966, 2023.
53. Praveen Kumar D., Tarachand Amgoth, Chandra Sekhar Annavarapu, "An Extended ACO-based Mobile Sink Path Determination in Wireless Sensor Networks", **J. of Ambient Intelligence & Humanized Computing**, Vol. 12, pp. 8991 - 9006, 2021.
54. Madana Srinivas and Tarachand Amgoth, "Delay Tolerant Charging Scheduling By Multiple Mobile Chargers In Wireless Sensor Network Using Hybrid GSFO", **J. of Ambient Intelligence & Humanized Computing**, Vol. 14, pp. 16063 - 16079, 2021.

55. Prasannababu and Tarachand Amgoth, "Adaptive SSO Based Node Selection For Partial Charging In Wireless Sensor Network", Peer-to-Peer Networks and Applications (Springer-Nature), Vol.10, pp. 66 - 78, 2021.
56. Tarachand Amgoth and Prasanta K. Jana, "Coverage-hole detection and restoration algorithm for wireless sensor networks", Peer-to-Peer Networks and Applications (Springer-Nature), Vol.10, pp.66 - 78, 2017.
57. Tarachand Amgoth and Prasanta K. Jana, "Efficient Overlay Construction for Wireless Sensor Networks", Wireless Personal Communications (SpringerNature), Vol. 86, pp. 959 - 973, 2016.
58. Tarachand Amgoth and Prasanta K. Jana, "Energy and coverage-aware routing algorithm for wireless sensor networks", Wireless Personal Communications (SpringerNature), Vol. 81, pp. 531 - 544, 2015.
59. Sunil Kumar, Dheeraj Kumar, Praveen Kumar Donta and Tarachand Amgoth, "Land Subsidence Monitoring and Prediction using Modified PSInSAR and Recurrent Neural Networks", Stochastic Environmental Research and Risk Assessment: Accepted, 2021.
60. Korra Cheena and Tarachand Amgoth, and Gauri Shankar, "Proportional-integral-derivative controller-based self-healing of distribution system using wireless sensor networks in smart grid", International Journal of Communication System (Wiley): Accepted, 2022.
61. Madana Srinivas and Tarachand Amgoth, "EE-hHHSS: Energy Efficient Wireless Sensor Network with Mobile Sink Strategy Using Hybrid Harris Hawk- Salp Swarm Optimization Algorithm", International Journal of Communication System (Wiley): Accepted, 2020.

Conference:

1. Sai V. Rao, Tarachand Amgoth, A. Bhattacharya, "Dynamic Query Vision Transformers and Hierarchical Latent Compression: Advancing Real Time Surveillance systems", ETTIS 2025.
2. M Mathada, Tarachand Amgoth, "An Integrated Mobility-Oriented Wireless Charging Scheme for Wireless Sensor Network", AllIoT 2024.
3. A Hazra, M Adhikari, Tarachand Amgoth, "Dynamic service deployment strategy using reinforcement learning in edge networks", IC3SIS 2022.
4. Madana Srinivas, Praveen Kumar Donta, Tarachand Amgoth, Dynamic service deployment strategy using reinforcement learning in edge networks, OCIT 2021.
5. DK Sah, N Mazumdar, P Pal, T Amgoth, "A Comprehensive Study of Solar Energy Harvesting System in Wireless Sensor Networks", UPCON 2022.
6. Ramesh Kumar and Tarachand Amgoth, "Delaunay tetrahedron based connectivity approach for 3D wireless sensor networks", MISIP 2022.
7. Dipak K. Sah and Tarachand Amgoth, "Target coverage area in energy harvesting wireless sensor networks", ICPCT 2022.
8. Ramesh Kumar and Tarachand Amgoth, "Deployment of sensor nodes for connectivity restoration and coverage maximization in WSNs", WiSPNET 2021.
9. Madana Srinivas, Praveen Kumar Donta and Tarachand Amgoth, "Efficient Algorithms for Point and Area Sweep-Coverage in Wireless Sensor Networks", WiSPNET 2021.
10. Madana Srinivas, Praveen Kumar Donta and Tarachand Amgoth, "Finding the Minimum Number of Mobile Sinks for Data Collection in Wireless Sensor Networks", COMNETSAT 2020.

11. Biswa Mohan Sahoo, Tarachand Amgoth, and Hari Mohan Pandey, "A Modified Whale Optimization Based Energy Improvement Clustering for Wireless Sensor Networks", CONFLUENCE 2021.
12. Praveen Kumar D., Tarachand Amgoth, Chandra Sekhar Annavarapu, "Scheduled Virtual Machine Placement in IaaS Cloud: A MPSO Approach", IEMTRONICS 2020.
13. Biswa Mohan Sahoo, Tarachand Amgoth, and Hari Mohan Pandey, "Enhancing the network performance of wireless sensor networks on meta-heuristic approach: Grey Wolf Optimization", ICAAAIML 2020.
14. Madnesh K. Gupta, Ankit Jain, and Tarachand Amgoth, "Congestion-aware Data Acquisition with Q-learning for Wireless Sensor Networks", ICIIP 2019.
15. MK Gupta, Tarachand Amgoth, "Scheduled Virtual Machine Placement in IaaS Cloud: A MPSO Approach", ICIIP 2019.
16. Divya Singh and Tarachand Amgoth, "Joint Wireless Charging and Data Collection using Mobile Element for Rechargeable WSNs", GUCON 2019.
17. Shubham Vaishnav and Tarachand Amgoth, "Mobile Charger Scheduling using Partial Charging Strategy for Rechargeable WSNs", GUCON 2019.
18. Mainak Adhikari and Tarachand Amgoth, "Multi-Objective Accelerated Particle Swarm Optimization Technique for Scientific workflows in IaaS cloud", ISII 2018.
19. Madnesh K. Gupta and Tarachand Amgoth, "On-demand Virtual Machine Placement in Infrastructure Cloud", ICACCI 2018.
20. Madnesh K. Gupta and Tarachand Amgoth, "QoS-aware Virtual Machine Placement for Infrastructure Cloud", GUCON 2018.
21. Mainak Adhikari and Tarachand Amgoth, "An Enhanced Dynamic Load Balancing mechanism for task deployment in IaaS cloud", GUCON 2018.
22. Mainak Adhikari and Tarachand Amgoth, "Deadline-aware scheduling for scientific workflows in IaaS cloud", ICSICCS 2018.
23. Madnesh K. Gupta and Tarachand Amgoth, "Resource-aware algorithm for virtual machine placement in cloud environment", IC3 2016.
24. Mainak Adhikari and Tarachand Amgoth, "Efficient algorithm for workflow scheduling in cloud computing environment", IC3 2016.
25. Tarachand Amgoth and Prasanta K. Jana, "Energy-Aware Multi-level Routing Algorithm for Two-Tier Wireless Sensor Networks, ICD CIT 2014.
26. Tarachand Amgoth and Prasanta K. Jana, "EDCP: Efficient distributed clustering protocol for large-scale wireless sensor networks", ICECCS, 2013
27. Tarachand Amgoth and Prasanta K. Jana, "BDCP: A backoff-based distributed clustering protocol for wireless sensor networks", ICACCI 2013.
28. Tarachand Amgoth, V Kumar, A Raj, A Kumar, and Prasanta K. Jana, "An energy efficient load balancing algorithm for cluster-based sensor networks", INDICON 2012.