

JOY LAL SARKAR

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EDUCATION

Post-doctoral Research

December 2023

National Taipei University of Business, Taipei City, Taiwan

Tripura University (A Central University)

September 2022

Doctor of Philosophy (Ph.D.), Computer Science and Engineering

Thesis Title: Design and Analysis of Intelligent Recommendation Systems for Tourists

Biju Patnaik University of Technology, Odisha, India

July 2016

Master of Technology (M.Tech.), Computer Science and Engineering,

CGPA: 9.6/10

Thesis Title: Real-time Query Scheduling Approach in Wireless Sensor Networks (WSNs)

RESEARCH INTERESTS

Recommendation System, Machine learning, Mobile Cloud Computing, Healthcare Informatics

PROJECTS

- *UAV Based Image Acquisition and Analysis for Air Pollution Particles Detection and Labelling*, Approval No.:TiHAN-IITH/03/2022-23/371, funded by : **TiHAN -Indian Institute of Technology Hyderabad(IITH)**, Total cost:10.92 Lakhs, Duration :18 months (Co-PI)
- *TribeEyeAI: Portable Edge-AI Diagnostics and Tele-Health Infrastructure for Tribal Eye Care*, funded by: **Anusandhan National Research Foundation (ANRF)**, Total Cost: 4.8 Cr, Status: Accepted.
- *NeuroEyeTrack: AI-Powered Multimodal System for Early Neurological Screening in Underserved Populations*, funded by: **Department of Science and Technology (DST)**, Total Cost: 50 Lakhs, Submission Date: 30 July, 2025.
- *SAMHIT: Centre of Excellence for Social and Medical Health Intervention in Tribal Regions*, funded by: **Anusandhan National Research Foundation (ANRF)**, Total Cost: 20 Cr, Submission Date: 7 October, 2025.
- *SATRANG: A National Hub for Tribal Communication, Research, and Digital Growth*, funded by: **Ministry of Electronics and Information Technology (MeitY)**, Total Cost: 22 Cr, Status: Interview (2nd Round Completed, Revision Submitted).
- *Multi-Agent UAV-CPS-Based Real-Time Environmental Intelligence Platform*, funded by: **TiHAN – Indian Institute of Technology Hyderabad (IITH)**, Total Cost: 15 Lakhs, Submission Date: 3 July, 2025.
- *InfectiScan: AI-Integrated Biosensor System for Real-Time ICU Infection Diagnosis*, funded by: **IIT Mandi Innovation Hub**, Total Cost: 1 Cr, Status: Shortlisted.
- *DrugSafe: AIoT-Integrated Multidisciplinary Framework for Monitoring and Validation of Adverse Drug Reactions in Northeastern India*, funded by: **Indian Council of Medical Research (ICMR)**, Total Cost: 8 Cr, Submission Date: 12 September, 2025.
- *TRIBEMIND: Next-Generation AI-IoT Infrastructure for Tribal Mental Health Detection and Support*, funded by: **Department of Health Research (DHR)**, Total Cost: 9.9 Cr, Submission Date: 10 November, 2025.

- *AI-Enabled Tele-Cardiac Rehabilitation and Remote Monitoring System Integrating EpicOne WL, Sunfox Spandan, Amrita Spandanam, and CordeLiaKare for Affordable Real-Time Cardiac Care in Rural India*, funded by: **Anusandhan National Research Foundation (ANRF)**, Total Cost: 8.7 Cr, Submission Date: 7 November, 2025.
- *Arogya-Nephro: An Indigenous Smart Healthcare Ecosystem for Early Detection and Monitoring of Chronic Kidney Disease and Associated Ailments*, funded by: **Anusandhan National Research Foundation (ANRF)**, Total Cost: 7 Cr, Submission Date: 7 November, 2025.

JOURNAL PUBLICATIONS

1. Bibek Majumder, Chandan Kumar, Koduru Hajarathaiah, Joy Lal Sarkar, Mukesh Prasad, "Sketch to photo recognition using IF and Fuzzy minimal structure oscillation in the sift domain, *Scientific Reports, Nature Publishing Group UK*, (**Impact Factor: 4.5**)
2. K. Chowdhury, S. Deb, J. L. Sarkar and J. J. P. C. Rodrigues, S-TPE: Usability Enhanced Thumbnail-Preserving Cryptosystem Based on S-boxes for Securing IoT-Based medical images, in *IEEE Internet of Things Journal*, doi: 10.1109/JIOT.2025.3601804 (**Impact Factor: 10**).
3. J.L Sarkar et. al. PwLM μ -TPE: A Visual-Usability and Privacy-Enhanced Thumbnail Preserving Encryption Scheme of Cloud Computing for Consumers, *IEEE Transactions on Consumer Electronics*, (**Impact Factor: 4.3**)
4. Biswas et al. Event-Triggered Sliding Mode Controller for Cognitive Internet of Things, *IEEE Transactions on Network and Service Management (IEEE TNSM)*, <https://ieeexplore.ieee.org/document/10757339> (**Impact Factor: 4.7**)
5. Deb et. al. Enhancing Image Security via Block Cyclic Construction and DNA Based LFSR, *IEEE Transactions on Consumer Electronics*, (**Impact Factor: 4.3**)
6. **Sarkar, Joy**; V, Ramasamy; Majumder, Abhishek ; Pati, Bibudhendu; Panigrahi, Chhabi; Wang, Weizheng. (2022), i-Health: SDN-based Fog Architecture for IIoT Applications in Healthcare. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, (**Impact Factor: 4.7**).
7. **JL Sarkar**, SK Cowlessur, V Ramasamy, B Pati, TM Selvi, CR Panigrahi, FogCom: SDN-enabled fog node selection for early detection of communicable diseases, *Journal of King Saud University-Computer and Information Sciences*, 35 (6), 101432 (**Impact Factor: 5.2**).
8. **Sarkar, J L.**, Majumder, A. (2021). A new point-of-interest approach based on multi-itinerary recommendation engine, *Expert Systems With Applications*, 181: 115026, (**Impact Factor: 7.5**)
9. **Sarkar, J L.**, Majumder, A. (2022). gTour: Multiple Itinerary Recommendation Engine for Group of Tourists, *Expert Systems With Applications*, 191, 116190, (**Impact Factor: 7.5**)
10. **JL Sarkar**, A Majumder, CR Panigrahi, S Roy, B Pati, Tourism recommendation system: A survey and future research directions, *Multimedia Tools and Applications* 82 (6), 8983-9027 (**Impact Factor: 3.0**)
11. **J.L. Sarkar**, A. Majumder, C.R. Panigrahi & S. Roy, (2020). MULTITOUR: A multiple itinerary tourists recommendation engine. *Electronic Commerce Research and Applications*. DOI: 40.100943. 10.1016/j.elerap.2020.100943, (**Impact Factor: 5.9**).
12. C.R. Panigrahi, **J.L. Sarkar**, M. Tiwary et al. "DATALET : An approach to manage big volume of data in cyber foraged environment", *Journal of Parallel and Distributed Computing (Elsevier)*, <https://doi.org/10.1016/j.jpdc.2019.04.005>. 2019, (**Impact Factor: 4.3**).
13. B. Pati, **J.L. Sarkar**, C. R. Panigrahi "Transmission in Mobile Cloudlet Systems with Intermittent Connectivity in Emergency Areas", *Digital Communications and Networks (Elsevier)*, Vol. 4, No. 1, pp. 69-75, 2018, (**Impact Factor: 7.5**).

14. B. Pati, J. L. Sarkar, and C. R. Panigrahi, "ECS: An Energy Efficient Approach to Select Cluster-Head in Wireless Sensor Networks", **Arabian Journal for Science and Engineering (Springer)**, Vol. 42, No. 2, pp 669-676, 2016, (**Impact Factor: 4.3**), **Impact Factor: 2.334**.
15. C. R. Panigrahi, **J.L. Sarkar**, and B. Pati, "CPDA: A Conflict-free Periodic Data Aggregation Technique in Wireless Sensor Networks", **Egyptian Informatics Journal (Elsevier)**, ISSN: 1110-8665, 2016, (**Indexed by SCI Expanded**), <http://dx.doi.org/10.1016/j.eij.2016.06.005>, (**Impact Factor: 4.3**).
16. **J.L. Sarkar** , C.R. Panigrahi , B Pati , A. K Saha, A. Majumder. "MAAS: A mobile cloud-assisted architecture for handling emergency situations". **International Journal of Communication Systems (Wiley)** ;e3950. <https://doi.org/10.1002/dac.3950>, 2020 (**Impact Factor: 1.7**).
17. Panigrahi, C.R., **Sarkar, J L.**, Pati, B., Buyya, R., Mohapatra, P. and Majumder, A. (2021), Mobile Cloud Computing and Wireless Sensor Networks: A review, integration architecture, and future directions. **IET Network**, 10: 141-161. <https://doi.org/10.1049/ntw2.12013>
18. Ramasamy, V, Gomathy, B, **J.L. Sarkar**, Majumder, A, & Panigrahi, CR, "SensMask: An Intelligent Mask for Assisting Patients During COVID-19 Emergencies", **Computacion y Sistemas**, (Accepted) (Indexed by Scopus).
19. K. Chowdhury, A. Majumder, **J.L. Sarkar**, S. Chakraborty, S. Roy, "Ward_p_HMM: A Shilling Attack Detection Technique Using Ward_p Method and Hidden Markov Model", **Computacion y Sistemas**, 25(3), 2021 (Indexed by Scopus).
20. Ramasamy, V, Gomathy, B, **J.L. Sarkar**, Panigrahi, CR, Pati, B, & Majumder, A, "DCQSH: Dynamic conflict-free query scheduling in heterogeneous networks during emergency", **Computacion y Sistemas (CyS)**, vol. 25, no. 1, 2021, pp. 117-128, (Indexed by Scopus).
21. V Ramasamy, B Gomathi , **J.L. Sarkar** , C.R. Panigrahi , B Pati , A. Majumder "EMC² : An Emergency Management System Using Mobile Cloud Computing", **IET Networks**, 2020., (**Indexed by SCOPUS**).
22. R.K. Verma, **J.L. Sarkar**, C. R. Panigrahi, , and B. Pati, "mMedia: An Efficient Transmission Policy for Multimedia Applications Using Mobile Cloud Computing", **International Journal of Sensors, Wireless Communications and Control** , (**Indexed by Elsevier SCOPUS**), Vol. 8, No. 3, pp. 1-11, 2018.
23. R.K Verma, C. R. Panigrahi, B. Pati, **J. L. Sarkar**, A. Majumder, "A Mobile Cloudlet Assisted Architecture for Handling Multimedia Applications", **Computacion y Sistemas (CyS)**, (**Indexed by SCOPUS**), 2019.
24. B. Pati, C. R. Panigrahi, and **J.L. Sarkar**, "CETM: A Conflict-free Energy Efficient Transmission Policy in Mobile Cloud Computing", **International Journal of Communication Networks and Distributed Systems (Inderscience)**, DOI: <https://doi.org/10.1504/IJCND.2018.089763>, 2016 (**Indexed by Elsevier SCOPUS**), **Impact Factor: 0.86**.
25. M. Rath, B. Pati, B.K. Pattanayak, C.R. Panigrahi, **J.L. Sarkar**, "Load Balanced Routing Scheme for MANETs With Power and Delay Optimization", **International Journal of Communication Networks and Distributed Systems (Inderscience)**, ISSN:1754-3924 (Accepted), (**Indexed by Elsevier SCOPUS**), **Impact Factor: 0.86**.

CONFERENCE PUBLICATIONS

1. Joy Lal Sarkar, Sheng-Lung Peng SAHA: An SDN Enabled Fog Architecture for Healthcare Applications, **25th International Conference on Distributed Computing and Networking, IISC Bangalore (CORE B Conference)**
2. C Kumar, S Das, S Singha, BB Bhowmik, JL Sarkar, IoT in Health Sector: An optical sensor for detection of tuberculosis in suspected patients' blood sample, 2023 IEEE Globecom Workshops

(GC Wkshps), 62-67 (**CORE B Conference**)

3. **Sarkar, J L.**, Majumder, A., Ramasamy V, Panigrahi, C. R. and Roy, S.. MERIT: Multi-Itinerary Tourist Recommendation Engine for Industrial Internet of Things, *IEEE International Conference on Computer Communications (IEEE INFOCOM workshop)*, (**CORE A+ Conference**).
4. **Sarkar, J L.**, Majumder, A. MultiCity:A Personalized Multi-Itinerary City Recommendation Engine, *International Conference on Computational Intelligence and Data Analytics (ICCIDA)*.
5. **Sarkar, J L.**, Majumder, A., C. R. Panigrahi, Ramasamy V, and R. Mall (2021). TRIP-TOUR:A Multi-itinerary Tourist Recommendation Engine Based on POI Visits Interval, *12th International Conference on Computing, Communication and Networking Technologies (ICCCNT-2021)*, IIT Kharagpur,IEEE, pp.1-7.
6. S. Sharma, A. K. Saha, J. L. Sarkar, CR Panigrahi “hBOSOS: An Ensemble of Butterfly Optimization Algorithm and Symbiosis Organisms Search for Global Optimization, *Progress in Advanced Computing and Intelligent Engineering*, Springer (**Best Paper Award**).
7. Verma, R.K., Panigrahi, C.R., Pati, B., **Sarkar, J.L.** (2020). An Efficient Approach for Running Multimedia Applications Using Mobile Cloud Computing. In: Pati, B., Panigrahi, C., Buyya, R., Li, KC. (eds) *Advanced Computing and Intelligent Engineering. Advances in Intelligent Systems and Computing*, vol 1089. Springer, Singapore.
8. M. Rath, **J.L. Sarkar** , C. R. Panigrahi , B. Pati, “QTM : A QoS Task Monitoring System for Mobile Adhoc Networks”, Springer, *In Proc. of 4th International Conference on Advanced Computing, Networking and Informatics (ICACNI-2017)*, NIT Goa.
9. S.K Giri, CR Panigrahi, B Pati, **J.L. Sarkar**, “A Novel Approach to Minimize Energy Consumption in Cloud Using Task Consolidation Mechanism”, *Progress in Advanced Computing and Intelligent Engineering*, Springer, Central University of Rajasthan, pp. 123-129.
10. S.K Giri, CR Panigrahi, B Pati, **J.L. Sarkar**, “A Novel Approach to Minimize Energy Consumption in Cloud Using Task Consolidation Mechanism”, *Progress in Advanced Computing and Intelligent Engineering*, Springer, Central University of Rajasthan, pp. 123-129.
11. P. K. Singh, R.K Verma, **J.L. Sarkar**, “MCC and Big Data Integration for Various Technological Frameworks”, *International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2017)*, Springer (Accepted) (**Best Springer Paper Award**)
12. S. Samal, M. R. Minshra, C.R.Panigrahi, B. Pati, **J.L. Sarkar**, “A Novel Approach to Avoid Selfish Nodes during the Allocation of Data item in Manet”, *International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2016)*, Springer, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Dec. 21-23, 2016.
13. **J.L. Sarkar**, C. R. Panigrahi, B. Pati, S. Debbarma, and R. Trivedi, “E2G: A Game Theory Based Energy Efficient Transmission Policy in Mobile Cloud Computing”, *International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2016)*, Springer, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Dec. 21-23, 2016.
14. **J.L. Sarkar**, R.K. Verma, C. R. Panigrahi, B. Pati, “EMS: An Emergency Management System Using Mobile Cloud Computing”, *TOPAS*, IIT Kharagpur, 2017.
15. M. Rath, **J.L. Sarkar** , C. R. Panigrahi , B. Pati, “QTM : A QoS Task Monitoring System for Mobile Adhoc Networks”, Springer, *In Proc. of 4th International Conference on Advanced Computing, Networking and Informatics (ICACNI-2017)*, NIT Goa.
16. Ramasamy V, J. Sarkar, R.Debnath, **J.L. Sarkar**, B. Pati, and C. R. Panigrahi, “MusMed: Balancing Blood Pressure with the Help of Music Therapy and ARBs”, *International Conference on Computational Intelligence in Data Mining (ICCIDM-2016)* , Springer, KIIT

University, Odisha, India, Dec.10-11, 2017.

17. B. Pati, **J.L. Sarkar**, and C. R. Panigrahi, “eCloud: An Efficient Transmission Policy for Mobile Cloud Computing in Emergency Areas”, *In Proc. of 4th International Conference on Advanced Computing, Networking and Informatics (ICACNI- 2016)*, NIT Rourkela, India, Sept. 22-34, 2016, **Springer (Best Student Travel Paper Award)**.
18. B. Pati, **J.L. Sarkar**, and C. R. Panigrahi, “CQS: A Conflict-free Query Scheduling in Wireless Sensor Networks” *The 3rd International Conference on Recent Advances in Information Technology (RAIT-2016)*, ISM Dhanbad, India, Mar. 3-5, 2016, (**IEEE Xplore**)..
19. C. R. Panigrahi, **J.L. Sarkar**, and B. Pati, “E3M: An Energy Efficient Emergency Management System Using Mobile Cloud Computing”, *10th IEEE International Conference on Advanced networks and telecommunications systems (IEEE-ANTS- 2016)*, (**IEEE Xplore**), IISc, Bangalore, Nov. 6-9, 2016.
20. R.K. Verma, C. R. Panigrahi, B. Pati, and **J.L. Sarkar**, “M2C: An Energy Efficient Mechanism for Computation in Mobile Cloud Computing”, *International Conference on Advanced Computing and Intelligent Engineering (ICACIE-2016)*, **Springer**, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Dec. 21-23, 2016 (Accepted).
21. **J.L. Sarkar** , C. R. Panigrahi , B. Pati, and R. Prasath, “MiW : An MCC- WMSN Integration Approach for Performing Multimedia Applications”, The 4 th *International Conference on Mining Intelligence and Knowledge Exploration, (MIKE-2016)*, **Springer** Center for Computing Research (CIC) of the National Polytechnic Institute (IPN), Mexico, November, 13-19, 2016.
22. **J.L. Sarkar**, C. R. Panigrahi, B. Pati, and H. Das, “A Novel Approach for Real-Time Data Management In Wireless Sensor Networks”, *In Proc. of 3rd International Conference on Advanced Computing, Networking and Informatics (ICACNI-2015)*, KIIT University, India, DOI:10.1007/978-81-322-2529-4 62, ISBN 978-81-322-2529-4, vol. 2, pp. 599-607, June 23-25, 2015 (**Springer**).
23. B. Pati, **J.L. Sarkar**, C. R. Panigrahi, and Mayank Tiwary, “ARTQS: An Advanced Real-Time Query Scheduling Approach in Wireless Sensor Networks”, *In Proc. of 1st International Conference on Green Computing and Internet of Things (ICGCIoT-2015)*, Galgotias University, Delhi, DOI:10.1109/ICGCIoT.2015. 7380461, INSPEC Accession Number: 15703631, pp. 219-224, Oct. 8-10, 2015 (**IEEE Xplore**).
24. B. Pati, **J.L. Sarkar**, C. R. Panigrahi, and Mayank Tiwary, “ECHSA: An Energy- Efficient Cluster-Head Selection Algorithm in Wireless Sensor Networks”, *The 3rd International Conference on Mining Intelligence and Knowledge Exploration, (MIKE-2015)*, IIIT Hyderabad, India, DOI:10.1007/978-3-319-26832-3 18, ISBN:978-3-319-26831-6, vol. 9468, pp. 184-193, Dec. 9-11, 2015 (**Springer**).
25. C. R. Panigrahi, **J.L. Sarkar**, B. Pati, and H. Das, “S2S:A Novel Approach for Source to Sink Node Communication in Wireless Sensor Networks” *The 3rd International Conference on Mining Intelligence and Knowledge Exploration, (MIKE-2015)*, IIIT Hyderabad, India, DOI:10.1007/978-3-319-26832-3 38, ISBN:978-3-319-26831-6, vol. 9468, pp. 406-414, Dec. 9-11, 2015 (**Springer**).
26. M. Mishra, C. R. Panigrahi, **J.L. Sarkar**, and B. Pati, “GECSA: A Game Theory Based Energy-Efficient Cluster-Head Selection Approach in Wireless Sensor Networks”, *International Conference on Man and Machine Interfacing (MAMI-2015)*, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, INSPEC Accession Number: 15937554, pp. 1-5, Dec. 17-19, 2015 (**IEEE Xplore**).
27. M. Mishra, C. R. Panigrahi, B. Pati, and **J.L. Sarkar**, “ECHS: An energy aware cluster head selection algorithm in Wireless Sensor Networks ”, *International Conference on Man and*

Machine Interfacing (MAMI-2015), C.V. Raman College of Engineering (Autonomous), Bhubaneswar, INSPEC Accession Number: 15937554, pp. 1-4, Dec. 17-19, 2015 (**IEEE Xplore**).

28. C. R. Panigrahi, B. Pati, Mayank Tiwary, and **J.L. Sarkar**, "EEOA: Improving Energy Efficiency of Mobile Cloudlets using efficient Offloading Approach", *9th IEEE International Conference on Advanced networks and telecommunications systems (IEEE-ANTS-2015)*, ISI Kolkata, India, DOI: 10.1109/ANTS. 2015.7413617,INSPEC Accession Number: 15804752, pp. 1-6, Dec.15-18, 2015 (**IEEE Xplore**).

SUBMITTED JOURNAL PAPER

1. **Sarkar, Joy**; V, Ramasamy; Majumder, Abhishek ; Pati, Bibudhendu; Panigrahi, Chhabi; Wang, Weizheng. (2022), i-Health: SDN-based Fog Architecture for IIoT Applications in Healthcare. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, **Impact Factor: 3.71**.
2. **Sarkar, Joy**; V, Ramasamy; Majumder, Abhishek ; Pati, Bibudhendu. (2022), FogCom: SDN-enabled Fog Node Selection for Early Detection of Communicable Diseases. *IEEE Journal on Selected Areas in Communications*, (Under Review), **Impact Factor: 9.144**.
3. **Sarkar, J L.**, Majumder, A. (2021). PINE: A Personalized Multi-Itinerary Recommendation Engine, *Journal of Ambient Intelligence and Humanized Computing* (Under Review) **Impact Factor: 7.104**.

SELECTED PAPERS FOR SPECIAL ISSUES OF JOURNAL PUBLICATIONS

1. B. Pati, **J. L. Sarkar**, and C. R. Panigrahi, "eCloud: An Efficient Transmission Policy for Mobile Cloud Computing in Emergency Areas", In Proc.of 4th International Conference on Advanced Computing, Networking and Informatics (ICACNI- 2016), NIT Rourkela, India, Sept. 22-34, 2016 (for Digital Communications and Networks, Elsevier (SCOPUS Indexed) (**Best Student Travel Paper Award**)).
2. **J. L. Sarkar** , C. R. Panigrahi , B. Pati, and R. Prasath, "MiW : An MCC-WMSN Integration Approach for Performing Multimedia Applications", The 4th International Conference on Mining Intelligence and Knowledge Exploration,(MIKE-2016), Springer Center for Computing Research (CIC) of the National Polytechnic Institute (IPN), Mexico, November, 13-19, 2016 (for International Journal of Distributed Sensor Networks, Sage Publications (**SCI Indexed**)).

PATENTS

1. From the Indian Government: "META-CAST v1.0.0: Realtime Adverse Drug Reaction Prediction and Alternate Treatment Suggestion System", Patent Number 405302-001
2. From the Indian Government: IoT-based Blockchain System for Clean Water Data Storage". Indian Patent, Aug 2023, Patent Number-202331055800.
3. From the Indian Government: AI-Based Musical Instrument, Patent Number-395296-001
4. From Indian Government: Drug Reaction Monitoring Tool, Patent Number: 437135-001.
5. From the Indian Government: SDN-enabled Fog Node Selection for Early Detection of Communicable Diseases (Ongoing).
6. From the Indian Government: Real-Time Medicine Adverse Reaction Analyzer, 439562-001
7. From the Indian Government: Voice-Enabled Medication Management Assistant Device, 439762-001

BOOK PUBLICATION

1. Proceedings of International Conference on Advanced Communications and Machine Intelligence (MICA 2024) Ayan Mondal, Sheng Lung Peng, Tauheed Ahmed, Joy Lal Sarkar, Co-editor International 2024, 2190-3018
2. Proceedings of International Conference on Advanced Communications and Machine Intelligence, Sheng-Lung Peng, Ayan Mondal, Venkateswara Rao Kagita, Joy Lal Sarkar Co-editor, International, 2024, 978-981-97-6222-4
3. A Majumder, **J. L. Sarkar**, A Majumder, Artificial Intelligence and Data Science in Recommendation System: Current Trends, Technologies and Applications, Bentham Science Publishers.
4. C. R. Panigrahi, **J. L. Sarkar**, Ramasamy V, "Android Applications: An Introduction", Universities Press India, (Accepted)
5. A. Majumder, **J. L. Sarkar** and A. Majumder, India. "Artificial Intelligence and Data Science in Recommendation System: Current Trends, Technologies, and Applications" by Bentham Science.

BOOK CHAPTER

1. A Majumder, K Chowdhury, JL Sarkar, Taxonomy of Shilling Attack Detection Techniques in Recommender System, *Machine Learning Algorithms and Applications in Engineering*, 141-160.
2. Purba Pal, Sharmila Ghosh, Priyanka Biswas, Nirmalya Kar, Joy Lal Sarkar, Secured Digital Watermarking Using Neural Networks, *Multimedia Watermarking: Latest Developments and Trends*, 2023.
3. Authors Shreya Roy, Abhishek Majumder, Joy Lal Sarkar, An Introduction to Various Parameters of the Point of Interest *Artificial Intelligence and Data Science in Recommendation System: Current Trends, Technologies, and Applications* Pages 189-204, 2023, Bentham Science Publishers,
4. Shreya Roy, Abhishek Majumder, Joy Lal Sarkar, Point of Interest Recommendation via Tensor Factorization, *Artificial Intelligence and Data Science in Recommendation System: Current Trends, Technologies, and Applications*, Pages 216-238, 2023, Bentham Science Publishers
5. Ramasamy V, C. R. Panigrahi, **J. L. Sarkar**, B. Pati, A. Majumder, M. Rath, S.-L. Peng, "Application of Deep Learning Strategies to Assess COVID-19 Patients", *Computational Intelligence Techniques for Combating COVID-19*, Springer, pp. 27-43, (https://doi.org/10.1007/978-3-030-68936-0_2).
6. B. Pati, **J. L. Sarkar**, C. R. Panigrahi, "Introduction to Bigdata and its Architecture", *Laxmi Books Publications*, ISBN: 978-1-365-01624-0 pp. 57-77, 2015.
7. B. Pati, R.K. Verma, **J. L. Sarkar**, C. R. Panigrahi, "Energy-aware Issues for Handling Big Data in Mobile Cloud Computing", *Springer, Mobile Big Data*, pp 233-256, 2017.
8. Ramasamy V, Gomathi B, **J. L. Sarkar**, C. R. Panigrahi and B. Pati, "Big Data Analytics for Prevention and Control of HIV/AIDS", *Data Intensive Computing Applications for Big Data*, IOS Press, 2018, DOI: 10.3233/978-1-61499-814-3-359, pp. 359 - 385, 2018.
9. V Ramasamy, B Gomathy, C. R. Panigrahi, **J. L. Sarkar**, B. Pati, A. Majumder, "Machine Learning Techniques and Tools Merits and Demerits", *New Age Analytics: Transforming Internet (AAP-CRC Publication)*, 2019.

1. Associate Professor, Department of CSE, Techno College of Engineering, Agartala, Tripura, India, 2026-Present.
2. Assistant Professor, Department of CSE, ICFAI University, Tripura, India, 2024-2026.
3. Associate Professor, Department of CSE, Techno College of Engineering, Agartala, Tripura, India, 2023-2024.
4. Assistant Professor, Department of CSE, Amrita Vishwa Vidyapeetham, Amaravati, Andhra Pradesh, India, Accredited 'A++' by NAAC, 2022 NIRF Rank: 05, 2022-2023.
5. Security Administrator, NIC Tripura State Centre, Ministry of Electronics & Information Technology, Government of India, 2022.
6. ARS College of Engineering, Chennai, Assistant Professor, Department of CSE, 2016-2018
7. IIRS (Utkal University, Odisha), Bhubaneswar, Lecturer, Department of CSE, 2013-2014

GOOGLE SCHOLAR MATRICS

Citations: 883+, h-index: 17, i10-index: 27

INVITED SPEAKER/KEYNOTE LECTURE

1. Invited Talk on Recent Healthcare Technologies Category/Type of Event: International (Abroad)
Date of Presentation (yyyy-mm-dd): 2024-10-25 Nanyang Technological University (NTU), Singapore
2. IIT Kharagpur: Workshop 2024 *Hands-on Introduction to Internet of Things (IoT) with Machine Learning (ML)*
3. TCEA & CSI (Kolkata): FDP 2024 *FDP on Modern and Innovative Tools in Engineering Education*
4. BTTTC Agartala: Seminar 2024 *2-Days national seminar on Emerging trends in teacher education towards sustainability: A focus on preparing teachers for new education*
5. Tripura University: ATAL FDP 2023 *AICTE Training and Learning (ATAL) academy sponsored Faculty Development Program on "Security aspects of Internet of Things (IoT) based EcoSystem"*
6. International Conference: Tamil Nadu 2022 *International Conference on Advanced Communications and Machine Intelligence [MICA 2022]*
7. International Conference: Mauritius 2020 *6th International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2020]*
8. International Conference: Bhubaneswar 2021 *7th International Conference on Advanced Computing and Intelligent Engineering [ICACIE 2021]*

LAB PREPARATION

Developed Virtual Lab for Mobile Cloud Computing, Department of Computer Science and Engineering, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Odisha.

WORKSHOPS/SHORT TERM COURSES ATTENDED

1. QIP/AICTE sponsored short term course on IoT, Convergence of Sensing, Cloud, and Big Data Networking, School of Information Technology, IIT Kharagpur, July 13-26, 2015 (2 weeks)
2. National workshop on Cloud Computing (NWCC 2015), C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Odisha, Mar. 27-28, 2015 (2 Days).

3. Short term course on Internet of Thing (IoT), in collaboration with IISc Bangalore and MSME, Govt. of India, CTTC, Bhubaneswar, Sept. 26-29, 2015 (4 days).
4. Short term course on Optimization Technique and its Engineering Applications, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Odisha, June 9-13, 2015 (1 week).
5. AICTE recognized short term course (ICT based) on Wireless Networks in collaboration with NITTTR Chandigarh and C.V. Raman College of Engineering (Autonomous), Bhubaneswar, May 2-6, 2016 (1 week).
6. AICTE recognized short term course (ICT based) on Open Source Technologies, C.V. Raman College of Engineering (Autonomous), Bhubaneswar, Odisha, 2016 (1 Week).

AWARDS

1. Young Researcher Award, International Conference on Interdisciplinary Issues (Management, IT & Social Sciences) in the Era of Industry 5.0 (ICIEI - 2023) 14th October, 2023 (Saturday)
2. Journal Editor:International Journal of Advanced Research in Big Data Management System
3. Topper in M.Tech. with CGPA 9.64/10, Computer Science & Engineering, CVRCE, Odisha, India, 2016.
4. Third position in Tripura State Science Fair, January 5-10, 2007.
5. First position in Science Exhibition under Tripura Mathematical Society, April 22, 2011.
6. INNS India ICACNI-2016 best student travel paper award, NIT Rourkela, India, 2016.
7. Best Springer Paper Award, ICACIE, Central University of Rajasthan, 2017.
8. Outstanding Reviewer Award from Digital Communications and Networks (DCAN), Elsevier, 2017.

SERVICES

1. IEEE ComSoc MMTC Communications Frontiers, IEEE Publisher, Co-director
2. International Conference on Advanced Communications and Machine Intelligence (MICA), Program Chair
3. Smart Tourism, Asia Pacific Academy of Science, Editor
4. International Conference on Advanced Computing and Intelligent Engineering (ICACIE), Program Chair
5. International Journal of Advanced Intelligence Paradigms, Inderscience, Editor
6. International Journal of Computational Systems Engineering, Inderscience, Editor
7. Frontiers in the Internet of Things, Lausanne, Switzerland, Section Editor
8. Reviewer of IEEE Transactions on Green Communications and Networking, 2024
9. Reviewer of Pervasive and Mobile Computing, 2023
10. Reviewer of IEEE Internet of Things Journal, 2023

11. Reviewer of IEEE Globcom, 2023
12. Reviewer of IEEE INFOCOM, 2023
13. Reviewer of Journal of Cleaner Production, Elsevier, 2021
14. Reviewer of Ad Hoc Networks, Elsevier, 2021
15. Reviewer of 3 rd International Conference on Mining Intelligence and Knowledge Exploration, (MIKE-2015), IIT Hyderabad, India, Dec. 9-11, 2015.
16. Reviewer of 1st International Conference on Green Computing and Internet of Things (ICGCIoT 2015), Galgotias University, Delhi, Oct. 8-10,2015.
17. Reviewer of 2nd International Conference on Computational Intelligence in Data Mining (ICCIDM-2015), Springer, RIT, India, Dec. 5-6, 2015
18. Reviewer of International Journal of Communication Networks and Distributed Systems (IJCNDS), Inderscience, 2017.
19. Reviewer of International Journal of Computational Science and Engineering (IJCSE), Inderscience, 2017.
20. Reviewer of Digital Communications and Networks (DCAN), Elsevier, 2017.

TECHNICAL SKILLS

Programming Languages	Python, C/C++, MATLAB, HTML
Machine Learning Tools	Pytorch, Tensorflow, Sklearn, Pandas, Numpy
Simulator	CloudSim, FogSim, MATLAB, NS-2, NS-3, One Simulator, NetTopo.
Platforms	Linux, Windows XP, Android OS, Ubuntu Server, Amazon web Services.
Tools	Eclipse, L A TEX ,Origin, Adobe Photoshop, PgfPlot, NetBeans, Amazon clou

TEACHING INTERESTS

- Real-time Systems
- Wireless Sensor Networks
- Mobile computing
- Machine Learning
- Advanced Architecture
- Object Oriented Language using JAVA
- Operating Systems
- Internet of Things
- Computer Networking
- Distributed Systems

CULTURAL ACTIVITIES

- 4 th year Diploma in Tabla under Bangiya Sangeet Parishad, 2008.
- 2 nd year Diploma in Rabindra Sangeet under Bangiya Sangeet Parishad, 2007.
- 2 nd year Diploma in Nazrul Sangeet under Bangiya Sangeet Parishad, 2006.

PERSONAL INFORMATION

Date of Birth: 05/02/1988
Sex: Male
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Religion: Hinduism
Caste: General
Language Known: English, Bengali, Hindi
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REFERENCES

1. Kalyanmoy Deb, Indian computer scientist, Professor in the Department of Electrical and Computing Engineering, Michigan State University, USA.
2. Prof. Siba K Udgata. Professor, School of Computer and Information Sciences, University of Hyderabad, India.
3. Prof. Sheng-Lung Peng, National Taipei University of Business, Department of Creative Technologies and Product Design, Taiwan
4. Dr. Ayan Mondal, Assistant Professor, Department of Computer Science and Engineering at the Indian Institute of Technology (IIT) Indore
5. Prof. Arun K. Pujari, Vice Chancellor, Central University of Rajasthan, (IEEE Senior Member).
6. Prof. Bibudhendu Pati, Assoc. Professor, Ramadevi Women's University, (IEEE Member).
7. Prof. Chhabi Rani Panigrahi, Asst. Professor, Ramadevi Women's University, (IEEE Member).
8. Dr. Abhishek Majumder, Assoc.. Professor, Tripura University, Tripura, India.
9. Prof. Katina Michael, Professor, Computing and Information Technology, Faculty of Engineering and Information Sciences, University of Wollongong, (IEEE Senior Member).
10. Dr. Imon Mukherjee, Department of Computer Science and Engineering, Indian Institute of Information Technology (IIIT) Kalyani.
11. Prof. Rajkumar Buyya, Professor, Department of Computer Science, University of Melbourne, (IEEE Fellow).
12. Prof. Prasant Mohapatra, Vice Chancellor for Research, Department of Computer Science, University of California, (IEEE Fellow).