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# Dr. Sibarama Panigrahi

Assistant Professor(Grade-I)



## ACADEMIC

<b>Ph. D. in CSE</b> , VSSUT (UCE) Burla, Odisha (Oldest Govt. Engineering College)	2019
<b>M. Tech. in CSE</b> , VSSUT (UCE) Burla, Odisha (Oldest Govt. Engineering College) (University Silver Medal)	2013
<b>B. Tech. in CSE</b> , Biju Patnaik University of Technology	2009

## EXPERIENCE

<b>Assistant Professor Grade-I (AGP 8000), National Institute of Technology, Rourkela, Odisha (An Institute of National Importance)</b>	03/04/2023 - Till date
<b>Assistant Professor, SUIIT, Sambalpur University, Burla, Odisha (State Govt. Funded Institute)</b>	26/09/2016 - 31/03/2023

## RESEARCH AND TEACHING INTERESTS

**Research:** Machine Learning, Deep Learning, Time Series Forecasting, Computational Biology, Soft Computing, Data Science  
**Teaching:** Artificial Intelligence and Machine Learning, Soft Computing, Programming and Data Structure, Theory of Computation, Compiler Design, Data Science, Computer Vision

## PROJECTS/GRANTS UNDERTAKEN (TOTAL AMOUNT: RS.4.7816697 CRORES)

<b>Studies on Deep Learning Models for Crude Oil Price Forecasting</b>	22.077 Lakh (Role: PI)	Core Research Grant Scheme, SERB, New Delhi
<b>Design and Development of Large Scale Time Series Forecasting Methods using Deep Learning Techniques</b>	4.5 Lakh (Role: PI)	OURIIP-2020 Scheme, Odisha State Higher Education Council
<b>Scientific Study for Slope Stability Monitoring and Strata Management Plan</b>	9.43997 Lakhs (Role: Co-PI)	Balasore Alloys Limited
<b>Revolutionizing Mine Safety: An AI enabled Fire Detection System for Active and Abandoned Underground Coal Mines</b>	421.00 Lakhs (Role: Co-PI)	CMPDIL, Govt. of India
<b>Big Data Platform for Temporal Storage of Clinical Data of Patients of Cardio Vascular Disease (CVD) and Data Mining for Better Diagnosis and Treatment</b>	21.15 Lakhs (Role: Co-PI)	Indian Council of Medical Research, Govt. of India

## ACADEMIC ACHIEVEMENTS

- Developed an electricity load forecasting software employing machine learning techniques for Western Odisha through the project sponsored in OURIIP-2020 Scheme. This software is presently being used by TPWODL for power purchasing and planning of Western Odisha. For this, received letter of appreciation from TPWODL and Vice-Chancellor, Sambalpur University.
- Qualified GATE-2012 (Score: 593, Marks:52.33).
- Qualified UGC NET in Computer Science and Applications.
- Associate Editor** of Plos One Journal
- Associate Editor** of Scientific Reports Journal.
- Senior Member, IEEE

## PUBLICATION IN SCI JOURNALS (TOTAL: 25, CUMULATIVE IMPACT FACTOR:93.1)

- Elsevier:** Engineering Applications of Artificial Intelligence (IF: 7.80, No.:3), Information Sciences (IF:8.23, No.:2), Pattern Recognition Letters (IF: 4.757, No.:1), Computational and Theoretical Chemistry (IF: 2.29, No.1)
- Taylor and Francis:** Applied Artificial Intelligence (IF: 2.77, No.2), Journal of Biopharmaceutical Statistics (IF: 1.2, No.1)
- Springer:** Soft Computing (IF: 4.01, No.1), Solar Physics (IF: 2.96, No.1), Arabian Journal for Science & Engineering (IF:2.81, No.3), Wireless Personal Communications (IF:2.01, No.1)
- Wiley:** Expert Systems (IF:3.3, NO. 1), Journal of Forecasting(IF:3.4, No. 1), International Transactions on Electrical Energy Systems (IF: 2.64, No.2), Optimal Control Applications and Methods (IF:1.95, 1)



## LIST OF SCI INDEXED JOURNAL PUBLICATIONS

1. Sibarama Panigrahi, and H. S. Behera\*. "A hybrid ETS-ANN model for time series forecasting." Engineering Applications of Artificial Intelligence 66 (2017): 49-59. <https://doi.org/10.1016/j.engappai.2017.07.007>
2. Sibarama Panigrahi\*. "A novel hybrid chemical reaction optimization algorithm with adaptive differential evolution mutation strategies for higher order neural network training." International Arab Journal of Information Technology 14(2017): 18-25.
3. Sibarama Panigrahi, and H. S. Behera\*. "Time Series Forecasting Using Differential Evolution-Based ANN Modelling Scheme." Arabian Journal for Science and Engineering 45(2020): 11129-11146. <https://doi.org/10.1007/s13369-020-05004-5>
4. R. M. Pattanayak, Sibarama Panigrahi, and H. S. Behera\*. "High-order fuzzy time series forecasting by using membership values along with Data and Support Vector Machine." Arabian Journal for Science and Engineering 45 (2020): 10311-10325. <https://doi.org/10.1007/s13369-020-04721-1>
5. Sibarama Panigrahi, and H. S. Behera\*. "A study on leading machine learning techniques for high order fuzzy time series forecasting." Engineering Applications of Artificial Intelligence 87 (2020): 103245. <https://doi.org/10.1016/j.engappai.2019.103245>
6. Sibarama Panigrahi\*, R. M. Pattanayak, P. K. Sethy, S. K. Behera. "Forecasting of Sunspot Time Series Using a Hybridization of ARIMA, ETS and SVM Methods." Solar Physics 296 (2021): 1-19. <https://doi.org/10.1007/s11207-020-01757-2>
7. S. K. Purohit, Sibarama Panigrahi\*, P. K. Sethy, and S. K. Behera. "Time series forecasting of price of agricultural products using hybrid methods." Applied Artificial Intelligence 35 (2021) 1388-1406. <https://doi.org/10.1080/08839514.2021.1981659>
8. R. M. Pattanayak, H. S. Behera\*, and Sibarama Panigrahi. "A novel probabilistic intuitionistic fuzzy set based model for high order fuzzy time series forecasting." Engineering Applications of Artificial Intelligence 99 (2021): 104136. <https://doi.org/10.1016/j.engappai.2020.104136>
9. S. K. Behera, P. K. Sethy\*, S. K. Sahoo, Sibarama Panigrahi, and S. C. Rajpoot, "On-tree fruit monitoring system using IoT and image analysis." Concurrent Engineering 29(2021) :6-15. <https://doi.org/10.1177/1063293X20988395>
10. P. K. Sethy, C. Pandey\*, M. R. Khan, S. K. Behera, K. Vijaykumar, and Sibarama Panigrahi, "A cost-effective computer-vision based breast cancer diagnosis." Journal of Intelligent & Fuzzy Systems 41(2021):5253-5263. <https://doi.org/10.3233/JIFS-189848>
11. M. K. Kar, S. Kumar, A. K. Singh, and Sibarama Panigrahi\*, "Reactive power management by using a modified differential evolution algorithm." Optimal Control Applications and Methods 44(2021): 967-986. <https://doi.org/10.1002/oca.2815>
12. M. K. Kar, S. Kumar, A. K. Singh, and Sibarama Panigrahi\*, "A modified sine cosine algorithm with ensemble search agent updating schemes for small signal stability analysis." International Transactions on Electrical Energy Systems 31(2021): e13058. <https://doi.org/10.1002/2050-7038.13058>
13. R. M. Pattanayak, H. S. Behera\*, and Sibarama Panigrahi. "A non-probabilistic neutrosophic entropy-based method for high-order fuzzy time-series forecasting." Arabian Journal for Science and Engineering 47 (2022): 1399-1421. <https://doi.org/10.1007/s13369-021-05718-0>
14. R. Pradhan, Sibarama Panigrahi, and P. K. Sahu\*, "Implementation of gradient gravitational search algorithm towards conformational search." Computational and Theoretical Chemistry 1208(2022): 113550. <https://doi.org/10.1016/j.comptc.2021.113550>
15. R. Yelchuri, J. K. Dash\*, P. Singh, A. Mahapatro, and Sibarama Panigrahi, "Exploiting deep and hand-crafted features for texture image retrieval using class membership." Pattern Recognition Letters 160(2022):163-171. <https://doi.org/10.1016/j.patrec.2022.06.017>
16. M. K. Kar, S. Kumar, A. K. Singh, S. Panigrahi, and M. Cherukuri\*, "Design and analysis of FOPID-Based damping controllers using a modified grey wolf optimization algorithm." International Transactions on Electrical Energy Systems 339630,(2022):1-31. <https://doi.org/10.1155/2022/5339630>
17. S. S. Pradhan, Sibarama Panigrahi\*, S. K. Purohit, and J. K. Dash, "Study and development of hybrid and ensemble forecasting models for air quality index forecasting", Expert Systems 40(2023): e13449. <https://doi.org/10.1111/exsy.13449>



18. R. M. Pattanayak\*, H. S. Behera, and Sibarama Panigrahi. "A Novel High Order Hesitant Fuzzy Time Series Forecasting by using mean Aggregated Membership value with Support Vector Machine." Information Sciences 626 (2023): 494-523. <https://doi.org/10.1016/j.ins.2023.01.075>
19. R. Pradhan, Sibarama Panigrahi, and P. K. Sahu\*, "Conformational search for the building block of proteins based on the gradient gravitational search algorithm (ConfGGS) using force fields: CHARMM, AMBER, And OPLS-AA." Journal of Chemical Information and Modeling 63(2023): 670-690. <https://doi.org/10.1021/acs.jcim.2c01398>
20. K. Das, S. Das, and Sibarama Panigrahi\*, "Energy-efficient forecasting of temperature data in sensor cloud system using a hybrid SVM-ANN method." Wireless Personal Communications 129(2023): 2929-2944. <https://doi.org/10.1007/s11277-023-10265-y>
21. G. Shial, S. Sahoo, and Sibarama Panigrahi\*, "An enhanced GWO algorithm with improved explorative search capability for global optimization and data clustering." Applied Artificial Intelligence 37(2023): e2166232. <https://doi.org/10.1080/08839514.2023.2166232>
22. T. K. Behera, S. Sathia, Sibarama Panigrahi, and P. K. Naik\*, "Revolutionizing cardiovascular disease classification through machine learning and statistical methods." Journal of Biopharmaceutical Statistics (2024):1-23. <https://doi.org/10.1080/10543406.2024.2429524>
23. S. S. Pradhan and Sibarama Panigrahi\*, "A study and development of high-order fuzzy time series forecasting methods for air quality index forecasting." Journal of Forecasting 43(2024): 1-24. <https://doi.org/10.1002/for.3153>
24. A. P. Padhy, Sibarama Panigrahi\*, V. P. Singh, and P. Pratyasha, "Model order reduction for SISO and MIMO system using improved adaptive differential evolution algorithm", Soft Computing, (2024):1-20. <https://doi.org/10.1007/s00500-023-09489-8>
25. S. K. Purohit and Sibarama Panigrahi\*, "Novel deterministic and probabilistic forecasting methods for crude oil price employing optimized deep learning, statistical and hybrid models." Information Sciences 658(2024): 120021. <https://doi.org/10.1016/j.ins.2023.120021>

## LIST OF SCOPUS INDEXED JOURNAL PUBLICATIONS

1. K.K. Sahu, Sibarama Panigrahi, and H. S. Behera\*. "A novel chemical reaction optimization algorithm for higher order neural network training." Journal of Theoretical & Applied Information Technology 53(2013):402-409.
2. Y. Karali, Sibarama Panigrahi, and H. S. Behera\*. "A Novel Differential Evolution based Algorithm for Higher Order Neural Network Training." Journal of Theoretical & Applied Information Technology 56(2013):355-361.
3. Sibarama Panigrahi, and H. S. Behera\*. "A computationally efficient method for high order fuzzy time series forecasting." Journal of Theoretical & Applied Information Technology 96 (2018): 7215-7226.
4. G. Shial, S. Sahoo, and Sibarama Panigrahi\*. "A Nature Inspired Hybrid Partitional Clustering Method Based on Grey Wolf Optimization and JAYA Algorithm." Computer Science 24 (2023):1-45. <https://doi.org/10.7494/csci.2023.24.3.4962>
5. G. Shial, C. R. Tripathy, S. Sahoo, and Sibarama Panigrahi\*. "A sine-cosine algorithm blended grey wolf optimisation algorithm for partitional clustering." Int. J. Computational Vision and Robotics 15(2025):198-232. <https://doi.org/10.1504/IJCVR.2023.10059975>

## LIST OF INTERNATIONAL CONFERENCE PUBLICATIONS

1. Sibarama Panigrahi\*, B. Rath, and P. S. Kumar, "A hybrid CRO-K-means algorithm for data clustering." in Computational Intelligence in Data Mining, Vol.3, pp.627-639, Springer 2014. [https://doi.org/10.1007/978-81-322-2202-6\\_57](https://doi.org/10.1007/978-81-322-2202-6_57)
2. Sibarama Panigrahi\*, H.S. Behera, and A. Abraham, "A Fuzzy Filter Based Hybrid ARIMA-ANN Model For Time Series Forecasting." in Proceedings Of The Eighth International Conference On Soft Computing And Pattern Recognition (SoCPaR 2016), pp.592-601, Springer 2017. [https://doi.org/10.1007/978-3-319-60618-7\\_58](https://doi.org/10.1007/978-3-319-60618-7_58)
3. Sibarama Panigrahi\* and H. S. Behera, "An Adaptive Fuzzy Filter-Based Hybrid ARIMA-HONN Model For Time Series Forecasting", in Computational Intelligence In Data Mining: Proceedings Of The International Conference On CIDM 2017, vol.711, pp.841-850, Springer 2018. [https://doi.org/10.1007/978-981-10-8055-5\\_74](https://doi.org/10.1007/978-981-10-8055-5_74)
4. Sibarama Panigrahi\* and H.S. Behera, "Time series forecasting using a hybrid Jaya-FLANN Model." in 2018 International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering (ICRIEECE), pp.3402-3407, IEEE, Bhubaneswar, India 2018. <https://doi.org/10.1109/ICRIEECE44171.2018.9008916>



5. R. M. Pattanayak, H. S. Behera\*, and Sibarama Panigrahi, "A Multi-step-ahead fuzzy time series forecasting by using hybrid chemical reaction optimization with Pi-sigma higher-order neural network." in Computational Intelligence in Pattern Recognition, pp.1029–1041, Springer 2019. [https://doi.org/10.1007/978-981-13-9042-5\\_88](https://doi.org/10.1007/978-981-13-9042-5_88)
6. Sibarama Panigrahi\* and H. S. Behera, "Fuzzy time series forecasting: a survey", in Computational Intelligence In Data Mining: Proceedings Of The International Conference On ICCIDM 2018, vol.990, pp.641-651, Springer 2019. [https://doi.org/10.1007/978-981-13-8676-3\\_54](https://doi.org/10.1007/978-981-13-8676-3_54)
7. R. M. Pattanayak\*, H.S. Behera, and Sibarama Panigrahi, "A Novel Hybrid Differential Evolution-PSNN For Fuzzy Time Series Forecasting." in Computational Intelligence in Data Mining, vol.990, pp.675–687, Springer 2019. [https://doi.org/10.1007/978-981-13-8676-3\\_57](https://doi.org/10.1007/978-981-13-8676-3_57)
8. G. Shial, S. Sahoo, and Sibarama Panigrahi\*, "Community detection and disease identification using meta-heuristic based clustering methods", in 2022 IEEE India Council International Subsections Conference (INDISCON), pp.1-6, IEEE, Bhubaneswar, India 2022. <https://doi.org/10.1109/INDISCON54605.2022.9862931>
9. G. Shial, S. Sahoo, and Sibarama Panigrahi\*, "Identification and analysis of breast cancer disease using swarm and evolutionary algorithm", in 2022 IEEE Region 10 Symposium (TENSYP), pp.1-6, IEEE, Mumbai, India 2022. <https://doi.org/10.1109/TENSYP54529.2022.9864514>
10. S. S. Pradhan and Sibarama Panigrahi\*, "Studies on machine learning techniques for multivariate forecasting of Delhi air quality index", in Advances in Data-Driven Computing and Intelligent Systems. ADCIS 2022., vol.698, pp.133–146, Springer, August 2023. [https://doi.org/10.1007/978-981-99-3250-4\\_10](https://doi.org/10.1007/978-981-99-3250-4_10)
11. S. S. Pradhan and Sibarama Panigrahi\*, "Delhi air quality index forecasting using statistical and machine learning models", in AIP Conference Proceedings, vol.2705, no.1, pp.020002, American Institute of Physics, June 2023. <https://doi.org/10.1063/5.0133357>
12. G. Shial, C. Tripathy, Sibarama Panigrahi, and S. Sahoo, "An Improved GWO algorithm for data clustering", in Computing, Communication and Learning. CoCoLe 2022, vol.1729, pp.79–90, Springer 2023. [https://doi.org/10.1007/978-3-031-21750-0\\_7](https://doi.org/10.1007/978-3-031-21750-0_7)
13. S. K. Purohit and Sibarama Panigrahi\*, "Ranking optimised statistical models for time series forecasting of crude oil price", in Computing, Communication and Intelligence, vol.1, Taylor and Francis, November 2024. <https://doi.org/10.1201/9781003581215-36>
14. S. K. Purohit and Sibarama Panigrahi\*, "Forecasting Crude Oil Prices: A Machine Learning Perspective", in International Conference on Computing, Communication and Learning, vol.1892, pp.15-26, Springer, March 2024. [https://doi.org/10.1007/978-3-031-56998-2\\_2](https://doi.org/10.1007/978-3-031-56998-2_2)
15. Kadiyam, Aswin Tirumala Someswar, Chinmaya Ranjan Padhan, and Sibarama Panigrahi. "A Study on Object Detection using Faster R-CNN, Retina net, RPN\_R\_50\_FPN, RPN\_R\_50\_C4." In 2024 International Conference on Intelligent Computing and Sustainable Innovations in Technology (IC-SIT), pp. 1-6. IEEE, 2024. <https://doi.org/10.1109/IC-SIT63503.2024.10862488>
16. C. Jayanth, and Sibarama Panigrahi. "Classification of Pigmented Skin Lesions using Early Fusion of Multi-Deep Features and Support Vector Machine." In 2024 International Conference on Intelligent Computing and Sustainable Innovations in Technology (IC-SIT), pp. 1-6. IEEE, 2024. <https://doi.org/10.1109/IC-SIT63503.2024.10862008>

## REVIEWER

1. Reviewer of Anusandhan National Research Foundation (ANRF) Projects.
2. Reviewer of Board of Research in Nuclear Sciences (BRNS) Projects.
3. **SCI Journals of Elsevier:** Engineering Applications of Artificial Intelligence, Expert Systems with Applications, Information Sciences, Information Fusion, Pattern Recognition, Neurocomputing, Technological Forecasting & Social Change, Economia, Energy, Heliyon, MethodsX.
4. **SCI Journals of IEEE:** IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Emerging Topics in Computing, IEEE Access.



5. **SCI Journals of Springer:** Soft Computing, Evolutionary Intelligence, Iranian Journal of Science and Technology, Transactions of Civil Engineering, International Journal of Data Science and Analytics, International Journal of Computational Intelligence Systems, Scientific Reports.
6. **SCI Journals of Wiley:** Journal of Forecasting, International Journal of Communication Systems, Expert Systems.
7. **SCI Journals of Taylor & Francis:** Communications in Statistics: Case Studies, Data Analysis, Computer methods in biomechanics and biomedical engineering, Hydrological Sciences Journal, Journal of Crop Improvement, Network: Computation in Neural Systems.
8. **SCI Journals of Plos:** Plos One.
9. **SCI Journals of SAGE:** Concurrent engineering, research and applications.

### RESEARCH GUIDANCE

**Ph.D.:** 01 Scholar (Awarded), 08 Scholars (Ongoing)

**M.Tech:** 09 Scholars(Awarded), 05 Scholars (Ongoing),

**B. Tech.:** 10 Projects (Completed), 04 Projects (Ongoing).

### LIST OF SHORT-TERM COURSES / WORKSHOPS / CONFERENCES ORGANIZED

1. National Workshop on "Neural Network and Deep Learning", 21 Feb -25 Feb 2023 at Sambalpur University Institute of Information Technology. (Convener)
2. Short Term Course on "Recent Trends in Time Series Forecasting using Deep Learning Models", 25 Dec 2023 - 29 Dec 2023 at NIT Rourkela. (Coordinator)
3. Short Term Course on "Introduction to Data Science using Python", 20 May 2024 - 24 May 2024 at NIT Rourkela. (Coordinator)
4. National Workshop on "Crisp and Fuzzy Time Series Forecasting using Deep Learning Techniques", 25 Sep 2024 - 29 Sep 2024 at NIT Rourkela. (Convener)

### RESOURCE PERSON

1. Delivered an Invited Talk on "The Art of Writing Research Proposals for Funding" in the Online Webinar, organized by Amity Institute of Information Technology, Amity University Jharkhand, Ranchi, on 09 June, 2023.
2. Delivered an Invited Talk on "The Art of Writing Research Proposals for Funding" in the Online Webinar, organized by Driems University, Cuttack, Odisha, on 24 June, 2023.
3. Delivered an Invited Talk on "Advances in Neural Network and Deep Learning" in the One Week International Workshop on Recent Trends in Mathematics and Computing (IWRTMC2023), organized by VSSUT, Burla, Odisha, on 19 August 2023.
4. Delivered an Invited Talk on "Time Series Forecasting employing Optimized Deep Learning Models" in the Online Workshop on "Artificial Intelligence in Materials Engineering: Theory and Hands-on Practice" organized by Department of Metallurgical and Materials Engineering, National Institute of Technology Rourkela, on 21 September 2023.
5. Delivered an Invited Talk on "Time Series Forecasting using Optimized Deep Learning and Hybrid Models", in the Seminar organized by IEEE Student Branch, VSST, Burla on IEEE day 30 September 2023.
6. Delivered an Invited Talk on "Advances in Neural Network and Deep Learning", in the AICTE Sponsored One Week Faculty Development Program on "Exploring the Technological trends in Machine Learning and Artificial Intelligence-Need of the Hour", organized by MVJ College of Engineering, Bangalore on 9 October 2023.
7. Delivered an Invited Talk on "Time Series Forecasting using Optimized Deep Learning, Statistical and Hybrid Models", in the one week workshop on "Intelligent Computing for Signal Processing Applications", organized by Sambalpur University Institute of Information Technology, Burla, Odisha on 17 January 2024.
8. Delivered an Invited Talk on "Take Control of Your Data" organized by the Institution of Engineers (India), Rourkela Local Centre, on the occasion of Data Protection Day on 29 January 2024.
9. Delivered an Invited Talk on "Time Series Forecasting using Deep Learning Techniques" in the Faculty Development Programme on "INDUSTRY 4.0 AND SMART SYSTEMS" (Funded by SERB. Govt. of India), organized by JIS College of Engineering, Kolkata on 9 February 2024.





10. Delivered an Invited Talk on “Modern Techniques of Information and Communication Technology (ICT) in Education” in the Second Faculty Development Programme on National Education Policy-2020 Orientation and Sensitization Programme conducted by UGCMalaviya Mission Teacher Training Programme, Sambalpur University 16 February 2024.
11. Delivered an Invited Talk on “Whale Optimization Algorithm and its Application to Deep Learning Based Time Series Forecasting” in the Faculty Development Programme on “Optimization Technique for Engineering Applications”, organized by E&ICT, NIT Warangal on 22 March 2024.
12. Delivered a Pre-Conference Tutorial Talk on “Recent Advances in Time Series Forecasting using Machine Learning Techniques” in the International Conference on Machine Learning, IoT and Big Data (ICMIB-2024), Organized by GIET University, Gunupur on 29 March 2024.
13. Delivered an Invited Talk on “Whale Optimization Algorithm and its Application to Deep Learning Based Time Series Forecasting” in the Faculty Development Programme on “Emerging Applications of Optimization Techniques”, organized by E&ICT, KITS Warangal on 12 April 2024.
14. Delivered an Invited Talk on “Modern Techniques of Information and Communication Technology (ICT) in Education” in the UGC-Malaviya Mission Teacher Training Programme organized by North-Eastern Hill University, Shillong on 22 April 2024.
15. Delivered an Invited Talk on “Expert Systems Applications with AI Techniques” in the workshop on “Artificial Intelligence & Machine Learning: Theory & Hands-on Practice (AIML- 2024)” Sponsored by SERB and organized by Department of CSE, NIT Rourkela on 24 June 2024.
16. Delivered an Invited Talk on “Modern Techniques of Information and Communication Technology (ICT) in Education” in the Third Faculty Development Programme on National Education Policy-2020 Orientation and Sensitization Programme conducted by UGCMalaviya Mission Teacher Training Programme, Sambalpur University 14 June 2024.
17. Delivered an Invited Talk and handled a hands-on session on “Dimensionality Reduction Techniques” in the workshop on “Artificial Intelligence & Machine Learning: Theory & Hands-on Practice (AIML- 2024)” Sponsored by SERB and organized by Department of CSE, NIT Rourkela on 27 June 2024.
18. Delivered an Invited Talk on “Time series analysis on weather data” in the Five-day workshop on “IoT and its Applications”, organized by Ewarn System Private Limited on 15 July 2024.
19. Delivered an Invited Talk on “Modern Techniques of Information and Communication Technology (ICT) in Education” in the Fourth Faculty Development Programme on National Education Policy-2020 Orientation and Sensitization Programme conducted by UGCMalaviya Mission Teacher Training Programme, Sambalpur University 25 July 2024.
20. Delivered an Invited Talk on “Deep Learning employing High Performance Computing” in the AICTE sponsored workshop on High Performance Computing & Its Application in AI (HPCAA-24) organized by Silicon University, Bhubaneswar on 9 August 2024.
21. Delivered an Invited Talk on “Time Series Forecasting employing Deep Learning and High Performance Computing” in the AICTE sponsored workshop on High Performance Computing & Its Application in AI (HPCAA-24) organized by Silicon University, Bhubaneswar on 9 August 2024.