

# RESUME

**Dr. Umesh Chandra Pati**

Professor

Department of Electronics and Communication Engineering

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## **1. SHORT BIOSKETCH**



**Dr. Umesh C. Pati** is a Full Professor at the Department of Electronics and Communication Engineering, National Institute of Technology (NIT), Rourkela. He has obtained his B.Tech. Degree in Electrical Engineering from the National Institute of Technology (NIT), Rourkela, Odisha. He received both M.Tech. and Ph.D. degrees in Electrical Engineering with specialization in Instrumentation and Image Processing, respectively, from the Indian Institute of Technology (IIT), Kharagpur. He is currently serving as Chairperson of the International Students Cell, NIT Rourkela. He has also served as Head of the Career Development Center at NIT Rourkela for three years.

His current areas of interest are Image/Video Processing, Computer Vision, Artificial Intelligence, Medical Imaging, Internet of Things (IoT), Industrial Automation, and Instrumentation Systems. He has authored/edited two books and published more than 150 articles in peer-reviewed international journals as well as conference proceedings. He has served as a reviewer in a wide range of reputed international journals and conferences. He has delivered a number of Keynote/Invited Talks at various International/National platforms. He has also guest-edited Special Issues of Cognitive Neurodynamics and the International Journal of Signal and Imaging System Engineering. Dr. Pati has filed 4 Indian patents. Besides other sponsored projects, he is currently associated with a high-value IMPRINT project, “Intelligent Surveillance Data Retriever (ISDR) for Smart City Applications,” which is an initiative of the Ministry of Education and Ministry of Housing and Urban Affairs, Govt. of India.

He has visited countries like the USA, Italy, Austria, Australia, Singapore, Mauritius, Bangladesh, Nepal, etc., in connection with research collaboration and paper presentations. He was also an academic visitor to the Department of Electrical and Computer Engineering, San Diego State University, USA, and the Institute for Automation, University of Leoben, Austria. He is a Senior member of IEEE, a Fellow of The Institution of Engineers (India), a Fellow of The Institution of Electronics and Telecommunication Engineers (IETE), and a life member of various professional bodies like MIR Labs (USA), The Indian Society for Technical Education, Instrument Society of India, Computer Society of India, and Odisha Bigyan Academy. His biography has been included in the 32nd edition of MARQUIS Who's Who in the World 2015. He is also recipient of Torchbearer of Education Award 2020 by Coding Ninjas.

## 2. EDUCATION

Degree	Specialization	Institute/University
B.Tech	Electrical Engineering	National Institute of Technology Rourkela
M.Tech	Instrumentation Engineering	Indian Institute of Technology Kharagpur
Ph.D	Computer Vision	Indian Institute of Technology Kharagpur

## 3. PROFESSIONAL AFFILIATION

- Senior Member: IEEE (Geoscience and Remote Sensing Society)
- Fellow: Institute of Engineers (India)
- Fellow: Institution of Electronics and Telecommunication Engineers (India)
- Life Member: The Indian Society for Technical Education (ISTE)
- Life Member: Instrument Society of India
- Life Member: Computer Society of India
- Life Member: Odisha Engineering Congress
- Life Member: Odisha Bigyan Academy
- Life Member: MIR Labs (USA)

## 4. AWARDS & RECOGNITION

- Best paper award in the International Conference on Intelligent Computing and Emerging Communication Technologies (ICEC-2024), 23<sup>rd</sup>-25<sup>th</sup> November, 2024, SRM University-AP, Amaravati, Andhra Pradesh, India.
- Best paper award in the 3<sup>rd</sup> Odisha IEEE International Conference on Electrical Power Engineering, Communication, and Computing Technology, 8<sup>th</sup> – 9<sup>th</sup> November, 2024, Siksha ‘O’ Anusandhan Deemed to be University, Bhubaneswar, Odisha.
- Best paper award in the 1<sup>st</sup> International Conference on Electronics, Communication and Signal Processing (ICECSP-2024), 8<sup>th</sup> -10<sup>th</sup> August, 2024, NIT-Delhi, Delhi, India, .
- Best paper award in the IEEE 3<sup>rd</sup> International Conference on Sustainable Energy and Future Electric Transportation (SEFET-2023) held on 9<sup>th</sup> -12<sup>th</sup> August, 2023, Siksha ‘O’ Anusandhan Deemed to be University, Bhubanswar, Odisha.
- Recipient of Torchbearer of Education Award 2020 by Coding Ninjas.
- Biography included in 32<sup>nd</sup> Edition of MARQUIS Who’s Who in the World 2015.
- Best paper award in the category of Computer science and Information Technology in International Conference on Advance Computing and Communication (ICACC 2013) held on 16<sup>th</sup> – 17<sup>th</sup> March 2013, Ranchi.
- Second prize for a paper in Electrical, Electronics, and Computer Science Division in 54<sup>th</sup> Annual Session of Orissa Engineering Congress, Bhubaneswar held on 9<sup>th</sup> February 2009.
- Third prize for a paper in Electronic and Electrical Engineering Division during Golden

Jubilee Session held on 26<sup>th</sup> February, 2005 of Odisha Engineering Congress.

- National Scholarship (High School Certificate Examination).
- National Rural Talent Search (NRTS) Scholarship (Class-VII).
- Upper Primary Scholarship (Class-V).

## 5. CURRENT AREA OF RESEARCH

- Image/Video Processing
- Computer Vision
- Artificial Intelligence / Machine Learning / Deep Learning
- Internet of Things (IoT)
- Biomedical Imaging
- Industrial Automation
- Instrumentation Systems

## 6. RESEARCH PROJECTS

Sl. No.	Sponsoring Agency	Project Title	Duration	Amount (in INR)
1.	Defense Research and Development Organization (DRDO), India	Development of Wireless Multi Sensor based Intelligent Security and Surveillance System	Jun. 2018 to Nov. 2021	27.24 Lakh
2.	IMPRINT India, an initiative of Ministry of Human Resource Development and Ministry of Housing and Urban Affairs, Government of India.	Intelligent Surveillance Data Retriever (ISDR) for Smart City Applications	Sep. 2017 to Mar. 2021	3.86 Crore
3.	Institute of Minerals & Materials Technology (IMMT), Bhubaneswar, Odisha	Application of Optical Triangulation to determine the wear of liner and lifter in ball mill	Jun. 2014 to Jan. 2015	2 Lakh
4.	Department of Science and Technology (DST), Govt. of India	Development of Virtual and Intelligent Instrumentation Laboratory (FIST Program)	Jan. 2012 to Jan. 2017	64 Lakh

## 7. PATENTS

- Goutam Kumar Sahoo, Rashmiranjan Nayak, Harshit Srivastava, Santos Kumar Das, Poonam Singh, **Umesh C. Pati**, Unagallage Nirmal Chathura Unagalle, Dhayan Dhananjaya Senanayake, and Bamunusinghe Arachchige Umesh Maduwantha, “A Low-Cost IMU/GPS Sensor-Based Real-Time System With Esp32 For Automatic Vehicle

Accident Detection And Alerting,” Indian Patent, Complete Specification (Filed, Indian Patent Application No.: 202331060341, Date of Filing: 08.09.2023).

- Rashmiranjan Nayak, **Umesh C. Pati**, Santos Kumar Das, Goutam Kumar Sahoo, and Poonam Singh, and Mohini Mohan Behera, “A Method and System for Video Surveillance based Automatic Crime Alert,” Indian Patent, Complete Specification (Published, Indian Patent Application No.: 202031030956, Date of Filing: 20.07.2020, Date of Publication: 14.08.2020, Date of FER: 16.09.2021, Date of Filing Reply to FER: 10.03.2022).
- Goutam Kumar Sahoo, Poonam Singh, Santos Kumar Das, Rashmiranjan Nayak, **Umesh C. Pati**, Dinesh Singh and Swetalin Priyadarshini, “Multi-sensor based real-time system for Automatic Accident detection and Intimation,” Indian Patent, Complete Specification (Published, Indian Patent Application No.: 202031028424, Date of Filing: 20.07.2020, Date of Publication: 14.08.2020, Date of FER: 24.05.2021, Date of Filing Reply to FER: 26.10.2021).

## 8. SHORT-TERM COURSES / WORKSHOP ORGANIZED

Sl. No.	Type	Title of the Program	Sponsoring Agency	Duration
1.	Workshop	2022 International Workshop on Remote Sensing and Societal Applications	IEEE GRSS Kolkata Chapter	28 <sup>th</sup> – 29 <sup>th</sup> Sept, 2022
2.	Workshop	Practical Implementation of Smart City Systems	Self-financed	21 <sup>st</sup> – 25 <sup>th</sup> May 2018
3.	Short Term Course	Design and Implementation of Instrumentation Systems using LabVIEW (DIISL 2016)	Self-financed	19 <sup>th</sup> – 23 <sup>rd</sup> Dec. 2016
4.	Short Term Course	Microsensors and Signal Conditioning (MSSC 2016)	TEQIP-II	24 <sup>th</sup> – 25 <sup>th</sup> Sept 2016
5.	Short Term Course	Design and Implementation of Instrumentation Systems using LabVIEW (DIISL 2015)	Self-financed	14 <sup>th</sup> – 19 <sup>th</sup> Dec. 2015

## 9. GUIDANCE

*A. Ph.D. Thesis Supervision: 5 completed, 6 ongoing*

Sl. No.	Name of the Research Scholar	Title of Ph.D. Thesis	Year of Completion
1.	Ranjan Kumar Senapati	Low Power VLSI Implementation of Image Compression Algorithms	2013
2.	Sankata Bhanjan Prusty	Development of Adaptive Robust Controllers for Controlling Liquid Level in a Tank	2018
3.	Achala Pandey	Development and Implementation of Novel	2018

		Algorithms for Image Mosaicing	
4.	Subhransu Padhee	System Identification and Model-based Controller Design	2018
5.	Sourav Paul	Development of Efficient Registration Algorithms for Remote Sensing Optical and SAR Images	2019
6.	Rashmiranjan Nayak	Automatic Detection, Classification, and Intimation of Video Anomalies for Smart City Applications	Ongoing
7.	Naba Krushna Sabat	Development of Wireless Multi Sensor-based Intelligent Security and Surveillance System	2025
8.	V N Sujit Vudattu	Development of Deep Learning-based Change Detection Techniques for Remote Sensing Images	Ongoing
9.	Prajnyajit Mohanty	Design and Development of Energy Autonomous IoT System	Submitted
10.	Mayank Mishra	Detection of Autism using AI-based Approaches	Ongoing
11.	Pranshu Jena	Brain Tumor detection using Deep Learning Approaches	Ongoing
12.	Nihar Ranjan Mohapatra	Deep Learning-based Biomedical Image Analysis for Disease Detection	Ongoing
13.	Akankhya Mohanty	Biometric Security using Machine Learning	Ongoing

***B. M.Tech. Research Thesis Supervision: 1 completed***

Sl. No.	Name of the Student	Title of Master Thesis	Year of Completion
1.	Vijay Kumar Sharma	Efficient VLSI Architectures for Image Compression Algorithms	2012

***C. M.Tech. Thesis Supervision: 57 completed, 3 ongoing***

Sl. No.	Name of the Student	Title of Master Thesis	Year of Completion
1.	Adarsh Kumar	Deep Learning for Time Series Anomaly Detection	Ongoing
2.	Ravi Monika Sai	Development of a Hybrid Machine Learning based Framework for Prediction of Photovoltaic Output Power	Ongoing

3.	Rambarki Pavan Kumar	Brain Tumor Detection using Machine Learning and Deep Learning	Ongoing
4.	Neeraj Kumar Gautam	Coral Reef Species and Bleaching Detection using Deep Learning based Approaches	2024
5.	Aella Govindarajulu	Development of machine learning based framework for forecasting solar panel output power.	2024
6.	Shalini Priya	Video anomaly detection using deep learning-based weakly supervised learning techniques	2024
7.	Anarkali Prabhakar	Multiclass classification of Brain Tumor using MRI Scans.	2024
8.	Pritha Dutta	Enhancing Industrial Quality Assurance through Deep Learning-based Unsupervised Image Anomaly Detection	2024
9.	Akshay Khanna	Detection of Autism Spectrum Disorder using Facial Images	2023
10.	Cherukuri Syam Sandeep	Solar Energy Forecasting using Machine Learning Technique	2023
11.	Prashant Dwivedi	Deep learning based insect pest detection	2023
12.	Shaik Riyaaz Nayeem	Detection of Anomalous Events in Surveillance Videos using Deep-learning based One-Class Classification Models	2023
13.	Devansh Sehrawat	Deep learning based detection of anomalous events using Surveillance videos	2023
14.	P. Sivakumar Reddy	Performance of Deep Learning Models for Time Series Data Forecasting	2023
15.	Shivam Gupta	Traffic Lane Localization using Clothoid Road Model	2022
16.	Mogarala Tejoyadav	Water Quality Forecasting of River Ganga Using Statistical and Deep Learning Approaches.	2022
17.	Chinmaya Kumar Meher	Automatic Detection of Abnormal Activities from Surveillance Videos using Deep-Generative Models for real-time applications.	2022
18.	Aishwarya Premlal Kogekar	Water Quality Forecasting of the River Ganga using Statistical and Deep	2021

		Learning Approaches	
19.	Ashwani	Nonlinear Compensation of Sensors	2021
20.	Omprakash Astya	Wireless Sensor Network Data Monitoring System	2020
21.	Goli Vishnukiran	Design of Computer Vision-based Bottle Inspection System using LabVIEW	2020
22.	Bhanu Pratap	Representation Learning for Image Anomaly Detection	2020
23.	Divya S.V	Development of SIFT-based Algorithms for SAR Image Registration	2019
24.	Shubham Shukla	Development of Control Algorithms for Two Tank Liquid Level Systems	2019
25.	M G Kiran	Modelling, Parametric Identification, and Control of CSTR System	2019
26.	Sukumar Barik	IoT Based Weather Monitoring and Intimation.	2018
27.	Subhajit Kumar Indra	Design of Wireless Data Acquisition System for Landslide Detection.	2018
28.	Unni R	PC Based Ultrasonic Intrusion Detection System	2018
29.	Susmitha Yalamati	Image Registration Using SIFT Algorithm	2018
30.	Prasanmit Nath	Sensor Integration for Inertial Navigation System in Ground Vehicles	2018
31.	Sukhada Ashok Raut	Underwater Image Registration	2017
32.	Abhinav Kumar Singh	Vision Based Inspection System of Beverage Industry	2017
33.	Ujwal Kumar Durgam	Synthetic Aperture Radar Image Registration Using Speeded Up Robust Features.	2016
34.	Ganesh Baliram Ingale	Design of PV Based Stand-Alone System for DC Microgrid	2016
35.	Rajesh Kumar Jha	Zigbee and GSM Based Wireless Data Acquisition System for Farming as well as Automatic Irrigation system	2016
36.	Purusottum Kumar	Dynamic Modelling of Process in Coal Based Thermal Power Plant	2016
37.	Praveen Kumar	IoT and GUI based Monitoring as well as Control of Home Appliances	2016
38.	Sudhansu Mallik	Underwater Image Enhancement	2016
39.	Nisha Kashyap	Design of Low-Cost Multi-Channel Data Acquisition System for Meteorological Application	2015
40.	G. Santhosh Kumar	Identification and Study of Performance of Controllers on Heat Exchanger	2015

41.	Deepak Choudhary	Two Degree of Freedom PID Controller for Quadruple Tank System	2015
42.	Upendra R. Moyyila	Detection and Recognition of Soccer Ball and Player	2015
43.	Pratish K. Sahoo	Mutual Information based Image Registration for Medical Imaging	2015
44.	Satish H. Bhati	Fingerprint Mosaicing using Modified Phase Correlation Method	2015
45.	Sandeep Kumar	Tuning of PID Controller for Higher Order System	2014
46.	Nilimamayee Samal	Data Acquisition and Linearization of Sensors: Greenhouse Case Study	2014
47.	Jyoti Ranjan Pati	Modeling, Identification, and Control of Cart-Pole System	2014
48.	Sangeeta Sahu	Image Registration Techniques for Medical Images	2014
49.	P. Govardhan	Night Time Pedestrian Detection for Advanced Driving Assistance Systems using Near-Infrared Images	2014
50.	Shishir Maheshwari	Image Blending using Graph Cut Method for Image Mosaicing	2014
51.	Sunita Mohanta	A LABVIEW based Data Acquisition System for Monitoring and Analysis of Vibration Signal	2013
52.	Raja N. Reddy	Fetal ECG Extraction using Wiener, SVD, and ICA Techniques	2013
53.	Abhyarthana Bisoyi	Implementation of Online Temperature Controller based on LABVIEW	2013
54.	Abhinav Deo	Recognition of Licence Plate and Detection of Optical Nerve Pattern using Hough Transform	2013
55.	Vimal Singh Bind	Robust Techniques for Feature-based Image Mosaicing using Image Fusion	2013
56.	Priya Ranjan Muduli	Development and Implementation of Image Fusion Algorithms based on Wavelets	2013
57.	Sankata Bhanjan Prusty	Linearization and Analysis of Level as well as Thermal Process using LabVIEW	2012
58.	Jyoti Prasanna Patra	A Phase-Locked Loop-based Integer N Frequency Synthesizer	2012
59.	Roopal Agrawal	Internet-based Data Logging and Supervisory Control of Boiler Drum	2012



		Level using LabVIEW	
60.	Rashmi Panda	Removal of Artifacts from Electrocardiogram	2012

***D. B.Tech. Thesis Supervision: 42 completed, 1 ongoing***

Sl. No.	Name of the Student	Title of the UG Thesis	Year of Completion
1.	Anurag Gan Chaudhuri	Anomalous action classification	Ongoing
2.	Savan Kumar	Detection of Brain Tumor using using YOLOv8 cascaded with Spatial Attention Module	2024
3.	Satya Ranjan Dutta	Detection of Anomalies and Forecasting in Time Series Data Generated by IoT Devices Using Machine Learning	2024
4.	Luv Khandelwal	Change detection in synthetic aperture radar images using spatial channel attention mechanism	2023
5.	Cheeraag Mishra	Time series analysis of river water quality forecasting using deep learning techniques	2023
6.	Ajay Kumar	Temperature forecasting using deep learning models	2023
7.	Heramba Panda	Deep learning-based efficient model for intrusion detection application	2022
8.	Suprabha Nayak	IoT enabled Smart Garbage Bin	2021
9.	Tushr Kanta Sahoo	Video-based Human Activity Recognition using Deep Neural Networks	2020
10.	Sneha Satakshi Tripathy	IoT based Monitoring of Water and Air Pollution in Real-Time	2020
11.	Bhatraju Veeranjanyulu	Real-time camera-based intruder detection by using deep learning	2020
12.	Gowrigari Sravan Kumar Reddy	Data Acquisition from sensors and Linearization using neural network techniques	2019
13.	Yasmin Kukul	Image-Based Abnormal Activity Detection	2019
14.	Anindita Gain	Image-Based Smart Parking System	2019
15.	Priyadarsani Suchismita Jena	Traffic Monitoring System using Image Processing	2018
16.	Vikash Singhal	Accident Detection and Automatic Hospital Intimation	2018

17.	Salman Siddique Khan	Detection of Anomalous Events in Surveillance Videos	2018
18.	Shubham Singh	Vehicle Accident Detection and Messaging using Arduino and GSM Module	2017
19.	Rajesh Kumar Behera	Linearization of Differential Pressure Flow sensor with Hardware Implementation	2017
20.	K. S. Manikanta Kumar	Accident Detection and Automatic Hospital Intimation	2017
21.	Himanshu S. Behera	A Comparative Analysis of Corner Detection Algorithms	2016
22.	Deepak K. Nayak	Image Segmentation using Hough Transform	2016
23.	Brajen Malakar	Design and development of a Heart Rate Sensor using Fingertip	2016
24.	Shital N. Meshram	Wireless Data Acquisition System using Global System for Mobile Communication (GSM)	2016
25.	Pooja Ghosh	Image Mosaicing using Feature Detection Algorithms	2015
26.	Abhisek Parida	Vein Pattern Extraction using Near-Infrared Imaging for Biometric Purposes	2015
27.	Siniprabha Behera	Data Acquisition from LVDT and its Analysis	2015
28.	Saurav Kumar	Design of Controllers for Three Tank System	2015
29.	Ishan Kumar Sarangi, Sudarshan Nayak	Image Mosaicing of Panoramic Images	2014
30.	Aditya N. Sahoo Jyoti P. Behera	Analysis and Control of Processes	2014
31.	Abhilash Mishra, Pinaki Mishra	Design of ON/OFF, Proportional, and PID Temperature Controllers using LABVIEW	2013
32.	Anuran Maiti	Analysis and Control of Processes	2013
33.	Pragyan Paramita Kar, Priyam Saikia	Performance of Different Control Strategies for Boiler Drum Level Control using LABVIEW	2013
34.	Ritesh Kumar Nayak, Sharad Agarwal	Comparison of Iris Identification Technique by using Modified SIFT and SURF Keypoint Descriptor	2013
35.	Pamarthi Kranthi Kumar, Ritika Ojha	Solar Tracker System for PV Module	2013
36.	Debesh Kuanr, Lokanath Tripathy	Accuracy Improvement in Odia Zip Code Recognition Technique	2012

37.	Birendra Nath Tripathy, Abinash Dash	Prototype Drowsiness Detection System	2012
38.	Asutosh Mishra, Alok Nanda	Master Hand Technology for the HMI using Hand Gesture and Colour Detection	2012
39.	Kavita Ekka, Sushmita Tigga	A Study on Photoplethysmography and its use for Heartbeat Counting	2011
40.	Dibyaranjan Pradhan, Ramakant Behera	Modeling of a Vehicle Speed Measurement System using Piezoelectric Sensors	2011
41.	Biswajit Jena, Sagar Kumar	Design of PID Controller using Bioinspired Evolutionary Techniques	2011
42.	Soumya Ranjan Nayak, Sagar Kumar Jena	Data Acquisition using PCL-207 Card	2010
43.	Sanjev Kumar, Sayed S Mohammad	PC-Based Data Acquisition using PCL- 208	2010

## 10. PEER-REVIEW ACTIVITIES

### A. Journals / Books

1. Editor-in-Chief, ACCENTS Transactions on Image Processing and Computer Vision (TIPCV).
2. Editor, Annals of Applied Sciences.
3. Editor, Global Journal of Neurology and Neuroscience.
4. Editor, Journal of Electronics and Telecommunication Engineering.
5. Editor, Computing and Artificial Intelligence.
6. Guest Editor, Special Issue in “Cognitive Vision and Intelligent Computation Approaches for COVID -19”, Cognitive Neurodynamic, 2020 (Springer).
7. Guest Editor, International Journal of Signal and Imaging Systems Engineering, Vol. 5, No. 4, 2012.
8. Guest Editor, International Journal of Signal and Imaging Systems Engineering, Vol. 6, No. 1, 2013.
9. Guest Editor, International Journal of Signal and Imaging Systems Engineering, Vol. 7, No. 1, 2014.
10. Editor, International Journal of Emerging Trends in Electrical and Electronics (ISSN: 2320-9569).
11. Advisory Board Member, International Journal of Advanced Computer Research (ISSN: 2249-7277).
12. Reviewer, Virtual Instrumentation using LabVIEW, Sanjay Gupta and Joseph John, 2<sup>nd</sup> Edition, Tata McGraw Hill, New Delhi.
13. Reviewer, Optical Fiber Communication, Gerd Keiser, 4<sup>th</sup> Edition, Tata McGraw-Hill Pvt. Limited.
14. Reviewer, Optical Fiber Communication, Cambridge University Press India.
15. Reviewer, IEEE Transactions on Industrial Electronics.

16. Reviewer, IEEE Transactions on Geoscience and Remote Sensing.
17. Reviewer, IEEE Transactions on Medical Imaging.
18. Reviewer, IEEE Transactions on Neural Networks and Learning Systems.
19. Reviewer, IEEE Transactions on Evolutionary Computation.
20. Reviewer, IEEE Transactions on Aerospace and Electronic Systems.
21. Reviewer, IEEE Transactions on Artificial Intelligence.
22. Reviewer, IEEE Transactions on Information Forensics and Security.
23. Reviewer, IEEE Transactions on Neural Systems and Rehabilitation Engineering.
24. Reviewer, IEEE Transactions on Automation Science and Engineering.
25. Reviewer, IEEE Transactions on Services Computing.
26. Reviewer, IEEE Transactions on Components, Packaging and Manufacturing Technology.
27. Reviewer, IEEE Transactions on Industrial Informatics.
28. Reviewer, IEEE Geoscience and remote sensing letters.
29. Reviewer, IEEE/ASME Transactions on Mechatronics.
30. Reviewer, IEEE Access.
31. Reviewer, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing.
32. Reviewer, Biomedical Signal Processing and Control (Elsevier).
33. Reviewer, Computers and Electrical Engineering (Elsevier).
34. Reviewer, Computers and Electronics in Agriculture (Elsevier).
35. Reviewer, Water Research (Elsevier).
36. Reviewer, Engineering Science and Technology (Elsevier).
37. Reviewer, Pattern Recognition (Elsevier).
38. Reviewer, Nuclear Engineering and Technology (Elsevier).
39. Reviewer, Heliyon (Elsevier).
40. Reviewer, Optik-International Journal for light Electron Optics (Elsevier).
41. Reviewer, Computer Methods and Programs in Biomedicine Update (Elsevier).
42. Reviewer, Expert Systems with Applications (Elsevier).
43. Reviewer, Journal of King Saud University: Engineering Sciences (Elsevier).
44. Reviewer, Ecological Informatics (Elsevier).
45. Reviewer, Digital Signal Processing (Elsevier).
46. Reviewer, Optics and Lasers in Engineering (Elsevier).
47. Reviewer, Marine Pollution Bulletin (Elsevier).
48. Reviewer, Signal Processing: Image Communication (Elsevier).
49. Reviewer, Cold Regions Science and Technology (Elsevier).
50. Reviewer, Alexandria Engineering Journal (Elsevier).
51. Reviewer, Scientific African (Elsevier).
52. Reviewer, Infrared Physics & Technology (Elsevier).
53. Reviewer, Measurement (Elsevier).
54. Reviewer, Journal of Cleaner Production (Elsevier).
55. Reviewer, Engineering Applications of Artificial Intelligence (Elsevier).
56. Reviewer, Image and Vision Computing (Elsevier).

57. Reviewer, Journal of Cleaner Production (Elsevier).
58. Reviewer, International Journal of Applied Earth Observation and Geoinformation (Elsevier).
59. Reviewer, International Society for Photogrammetry and Remote Sensing (ISPRS) (Elsevier).
60. Reviewer, Computers in Industry (Elsevier).
61. Reviewer, Ecological Engineering (Elsevier).
62. Reviewer, Neurocomputing (Elsevier).
63. Reviewer, EURASIP Journal on Advances in Signal Processing (Springer).
64. Reviewer, Journal of Institution of Engineers (India): Series B (Springer).
65. Reviewer, CSI Transactions on ICT (Springer).
66. Reviewer, International Journal of Automation and Computing (Springer).
67. Reviewer, The Visual Computer (Springer).
68. Reviewer, Artificial Intelligence Review (Springer).
69. Reviewer, Advances in Computational Intelligence (Springer).
70. Reviewer, Complex and Intelligent Systems (Springer).
71. Reviewer, Journal of Ambient Intelligence and Humanized Computing (Springer).
72. Reviewer, IET Image Processing (Wiley).
73. Reviewer, International Journal of Intelligent Systems (Wiley).
74. Reviewer, IET Electronics Letters (Wiley).
75. Reviewer, IET Circuits, Devices & Systems (Wiley).
76. Reviewer, Stat (Wiley).
77. Reviewer, Computational Intelligence, an International Journal (Wiley).
78. Reviewer, IETE Journal of Research (Taylor & Francis).
79. Reviewer, International Journal of Remote Sensing (Taylor & Francis).
80. Reviewer, Geocarto International (Taylor & Francis).
81. Reviewer, The Imaging Science Journal (Taylor & Francis).
82. Reviewer, Photogrammetric Record (Taylor & Francis).
83. Reviewer, Journal of Spatial Science (Taylor & Francis).
84. Reviewer, Cogent Engineering (Taylor & Francis).
85. Reviewer, Mathematical Problems in Engineering (Hindawi).
86. Reviewer, International Journal of Distributed Sensor Networks (Hindawi).
87. Reviewer, Advances in Computer Engineering (Hindawi).
88. Reviewer, International Journal of Computational Vision and Robotics (Inderscience).
89. Reviewer, International Journal of Automation and Control (Inderscience).
90. Reviewer, Remote Sensing (MDPI).
91. Reviewer, Sensors (MDPI).
92. Reviewer, Frontiers in Earth Science (Frontiers).
93. Reviewer, Mechatronics Systems and Control (ACTA Press).
94. Reviewer, AIMS Mathematics.
95. Reviewer, Journal of Applied Remote Sensing (SPIE).
96. Reviewer, Journal of Electronic Imaging (SPIE).
97. Reviewer, Transactions of Nanjing University of Aeronautics and Astronautics.

98. Reviewer, F1000Research.
99. Reviewer, PeerJ Computer Science.
100. Reviewer, Journal of Electronic Imaging.

## ***B. Conferences***

1. Member, Award Committee, 2025 IEEE India Geoscience and Remote Sensing Symposium (InGARSS 2025), 10<sup>th</sup> – 13<sup>th</sup> December 2025, IIIT Bhubaneswar, Odisha, India.
2. Member, Technical Program Committee, 8<sup>th</sup> World Engineering Conference on Contemporary Technologies (WECON 2025), 10<sup>th</sup>-11<sup>th</sup> October 2025, Chitkara University, Punjab, India.
3. Member, Technical Program Committee, 13<sup>th</sup> International Conference on Contemporary Engineering and Technology 2025 (ICCET), 19<sup>th</sup> – 20<sup>th</sup> September 2025, Prince Shri Venkateshwara Padmavathy Engineering College, Chennai, India.
4. Member, Technical Program Committee, 1st International Conference on Electronics and Computing, Communication Networking Automation Technologies (ICEC2NT - 2025), 4<sup>th</sup> – 5<sup>th</sup> September, 2025, Pune, India.
5. Member, Technical Program Committee, 4th International Conference on Mechatronics and Mechanical Engineering (ICMME 2025), 22<sup>nd</sup>-24<sup>th</sup> August 2025, Dalian, China.
6. Member, Technical Program Committee, 45th International Geoscience and Remote Sensing Symposium (IGARSS 2025), 3<sup>rd</sup> – 8<sup>th</sup> August 2025, Brisbane, Australia.
7. Member, Technical Program Committee, 8th International Conference on Machine Learning and Machine Intelligence (MLMI 2025), 25<sup>th</sup> -27<sup>th</sup> July 2025, Ritsumeikan University, Kyoto, Japan.
8. Member, Technical Program Committee, 5th International Conference on Electrical, Computer and Energy Technologies (ICECET 2024), 3<sup>rd</sup> – 6<sup>th</sup> July 2025, Paris, France.
9. Member, Technical Program Committee, International Joint Conference on Neural Networks (IJCNN 2025), 30<sup>th</sup> June – 5<sup>th</sup> July 2025, Rome, Italy.
10. Member, Technical Program Committee, 7th Asia Symposium on Image Processing (ASIP 2025), 13<sup>th</sup> – 15<sup>th</sup> June 2025, Tsukuba University, Tsukuba, Japan.
11. Member, Technical Program Committee, International Workshop on Advanced Sensing and Geo-Spatial Intelligence (ASGT 2025), 22<sup>nd</sup>-24<sup>th</sup> August 2025, Nanchang, China.
12. Member, Technical Program Committee, International Conference on “Recent Advancements in AI, Computational Intelligence, and Inclusive Technologies” (ICRAIC2IT-2025), 2<sup>nd</sup>-3<sup>rd</sup> May 2025, Vijayawada, India.
13. Member, Technical Program Committee, 50<sup>th</sup> IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 6<sup>th</sup> – 8<sup>th</sup> April 2025, Hyderabad, India.
14. Member, Advisory Committee, 5th International Conference On Emerging Trends And Technologies On Intelligent Systems (ETTIS 2025), 19<sup>th</sup> - 21<sup>st</sup> March 2025, Centre for Development of Advanced Computing (CDAC), India

15. Member, Technical Program Committee, 5th International Conference On Emerging Trends And Technologies On Intelligent Systems (ETTIS 2025), 19<sup>th</sup> - 21<sup>st</sup> March 2025, Centre for Development of Advanced Computing (CDAC), India
16. Member, Technical Program Committee, 3rd IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2025), 6<sup>th</sup> - 8<sup>th</sup> March 2025, Atal Bihari Vajpayee Indian Institute of Information Technology and Management (ABV-IIITM), Gwalior, Madhya Pradesh, India.
17. Member, Technical Program Committee, 3rd International Conference On Intelligent Systems, Advanced Computing And Communication (ISACC 2024), 27<sup>th</sup> -28<sup>th</sup> February 2025, Assam University, Silchar, India.
18. Member, Technical Program Committee, 3rd IEEE International Conference on Industrial Electronics: Developments & Applications (ICIDeA 2025), 21<sup>st</sup> – 22<sup>nd</sup> February 2025, KIIT School of Electrical Engineering, Bhubaneswar, India.
19. Member, Technical Program Committee, 9<sup>th</sup> Edition of Computer Vision and Image Processing (CVIP) Conference, 19<sup>th</sup> – 21<sup>st</sup> December 2024, Indian Institute of Information Technology Design and Manufacturing (IIITDM Kancheepuram), Chennai, India.
20. Member, Local Organizing Committee, 6th International Conference on Innovative Product Design and Intelligent Manufacturing Systems (IPDIMS 2024), 4<sup>th</sup> – 5<sup>th</sup> December 2024, National Institute of Technology, Rourkela, India.
21. Member, Technical Program Committee, 6<sup>th</sup> Asia Digital Image Processing Conference, 14<sup>th</sup> – 16<sup>th</sup> December, 2024, Japan.
22. Member, Technical Program Committee, 3<sup>rd</sup> International Conference on Automation, Robotics and Computer Engineering (ICARCE-2024), 17<sup>th</sup> – 18<sup>th</sup> December 2024, Online.
23. Member, Technical Program Committee, 4th International Conference on Artificial Intelligence, Information Processing and Cloud Computing (AIIPCC 2024), 13<sup>th</sup> – 15<sup>th</sup> December 2024, Sanya, China.
24. Member, Technical Program Committee, International Conference on Electrical and Computer Engineering Researches (ICECER 2024), 4<sup>th</sup> – 6<sup>th</sup> December 2024, Gaborone, Botswana.
25. Member, Technical Program Committee, 6th International Conference on Innovative Product Design and Intelligent Manufacturing Systems (IPDIMS 2024), 4<sup>th</sup> – 5<sup>th</sup> December 2024, Rourkela, India.
26. Member, Publicity Chair, 17th International Conference on International Conference on Security of Information and Networks (SINCONF-2024), 2nd – 4th December 2024, Sydney, Australia.
27. Member, Technical Program Committee, 17<sup>th</sup> International Conference on International Conference on Security of Information and Networks (SINCONF-2024), 2<sup>nd</sup> – 4<sup>th</sup> December 2024, Sydney, Australia.
28. Member, Technical Program Committee, 11<sup>th</sup> IEEE UP Section International Conference On Electrical, Electronics And Computer Engineering (UPCON-2024), 29<sup>th</sup> November – 1<sup>st</sup> December 2024, Lucknow, India.

29. Member, Technical Program Committee, 4th International Conference on Applied Electromagnetics, Signal Processing & Communication (AESPC 2024), 29th – 30th November 2024, Bhubaneswar, India.
30. Member, Technical Program Committee, 1<sup>st</sup> International Conference on Smart Technologies for Sustainable Development Goals (ICSTSDG), 06<sup>th</sup> - 08<sup>th</sup> November 2024, Chennai, India.
31. Member, Technical Program Committee, 10th International Conference on Fuzzy Systems and Data Mining (FSDM 2024), 5<sup>th</sup> – 9<sup>th</sup> November, 2024, Matsue, Japan.
32. Member, Technical Program Committee, 4<sup>th</sup> International Conference on Electrical, Computer, Electronics and Mechatronics Engineering (ICECCME 2024), 4th – 6th November, 2024, Maldives.
33. Member, Technical Program Committee, 8<sup>th</sup> International Conference on Computer Science and Application Engineering (CSAE), 18<sup>th</sup> - 20<sup>th</sup> October, 2024, Shanghai, China.
34. Member, Technical Program Committee, 3<sup>rd</sup> IEEE International Conference on Computer Vision and Machine Intelligence (IEEE-CVMI), 19<sup>th</sup> - 20<sup>th</sup> October, 2024, Prayagraj, India.
35. Member, Technical Program Committee, 13th International Conference on Recent Challenges in Engineering and Technology (ICRCET-24), 27<sup>th</sup>-28<sup>th</sup> September, 2024, Chennai, India.
36. Member, Technical Program Committee, 5<sup>th</sup> International Conference on Advanced in Electrical Engineering and Computer Applications (AEECA2024), 16<sup>th</sup> - 18<sup>th</sup> August, 2024, Dalian, China.
37. Member, Technical Program Committee, International Conference on Data Analytics and Insights (ICDAI-2024), 25<sup>th</sup> – 27<sup>th</sup> July, 2024, Techno International New Town, Kolkata, India.
38. Member, Technical Program Committee, 6<sup>th</sup> International Conference on Machine Learning and Computing (ACMLC-2024), 26<sup>th</sup> – 28<sup>th</sup> July, 2024, Bangkok, Thailand.
39. Member, Technical Program Committee, International Conference on Electrical, Computer and Energy Technologies (ICECET 2024), 25<sup>th</sup> – 27<sup>th</sup> July, 2024, Sydney, Australia.
40. Member, Technical Program Committee, IEEE International Conference on Smart Power Control and Renewable Energy (ICSPCRE 2024), 19<sup>th</sup> – 21<sup>st</sup> July, 2024, National Institute of Technology Rourkela, Odisha, India.
41. Member, Technical Program Committee, Asia Conference on Trends in Image Processing (ATIP-2024), 21<sup>st</sup> – 23<sup>rd</sup> June, 2024, London, United Kingdom.
42. Member, Technical Program Committee, 2<sup>nd</sup> International Conference on Communications, Computing and Artificial Intelligence (CCCAI 2024), 21<sup>st</sup>- 23<sup>rd</sup> June, 2024, Jeju, Korea.
43. Member, Technical Program Committee, 2024 International Conference on Intelligent Computing and Robotics, 12<sup>th</sup> – 14<sup>th</sup> April, 2024, Dalian, China.
44. Member, Technical Program Committee, International Conference on Cognitive Robotics and Intelligent Systems, 17<sup>th</sup> – 19<sup>th</sup> April, 2024, KPR Institute of Engineering and Technology, Coimbatore, India.



45. Member, Technical Program Committee, 11<sup>th</sup> International Conference on Advanced Computing (ADCO-2024), 23<sup>rd</sup> – 24<sup>th</sup> March, 2024, Sydney, Australia.
46. Member, Technical Program Committee, 11<sup>th</sup> International Conference on Bioinformatics and Bioscience (ICBB 2024), 20<sup>th</sup> – 21<sup>st</sup> January, 2024, Zurich, Switzerland.
47. Member, Technical Program Committee, 3<sup>rd</sup> International Conference on Control, Instrumentation, Energy & Communication (CIEC24), 25<sup>th</sup> – 27<sup>th</sup> January, 2024, University of Calcutta, India.
48. Member, Technical Program Committee, 4<sup>th</sup> International Conference on Computing and Information Technology (COIT 2024), 27<sup>th</sup> – 28<sup>th</sup> January, 2024, Copenhagen, Denmark.
49. Member, Technical Program Committee, International Conference on Intelligent Systems and Embedded Design (ISED-2023), 15<sup>th</sup> – 17<sup>th</sup> December, 2023, DIT University, Dehradun, India.
50. Member, Technical Program Committee, 20<sup>th</sup> India Council International Conference (INDICON) – 2023, 14<sup>th</sup> - 17<sup>th</sup> December, 2023, National Institute of Technology Warangal, India.
51. Member, Technical Program Committee, 3<sup>rd</sup> IEEE International Conference on Smart Technologies for Power, Energy and Control (STPEC) 10<sup>th</sup> – 13<sup>th</sup> December, 2023.
52. Member, Technical Program Committee, 2<sup>nd</sup> International Conference on Innovations in Data Analytics (ICIDA 2023), 29<sup>th</sup> - 30<sup>th</sup> November, 2023, Eminent College of Management and Technology, Kolkata, India.
53. Member, Technical Program Committee, 2023 International Conference on Advance in Artificial Intelligence and Applications (AAIA 2023), 19<sup>th</sup> - 20<sup>th</sup> November, 2023, Wuhan, China.
54. Member, Technical Program Committee, 5th International Conference on Intelligent Circuits and Systems (ICICS 2023), 12<sup>th</sup> – 13<sup>th</sup> October, 2023, Lovely Professional University, India.
55. Member, Technical Program Committee, IEEE 3<sup>rd</sup> International Conference on Sustainable Energy and Future Electric transportation (SEFET), 9<sup>th</sup> – 12<sup>th</sup> August, 2023, Siksha 'O' Anusandhan University, Bhubaneswar, India.
56. Member, Technical Program Committee, 2<sup>nd</sup> International Conference on Machine Learning Deep Learning Computational Intelligence for Wireless Communication (MDCWC2023), 22<sup>nd</sup> – 24<sup>th</sup> June, 2023, National Institute of Technology Tiruchirappalli, India.
57. Member, Technical Program Committee, 4<sup>th</sup> International Conference on Communication, Circuits, and Systems (iC3S 2023), 26<sup>th</sup> – 28<sup>th</sup> May 2023, Kalinga Institute of Industrial Technology, Bhubaneswar, India.
58. Member, Technical Program Committee, International Conference on Data Analytics and Insights (ICDAI-2023), 11<sup>th</sup> – 13<sup>th</sup> May, 2023, Techno International New Town, Kolkata, India.
59. Member, Technical Program Committee, 3<sup>rd</sup> International Conference on Emerging Trends and Technologies on Intelligent Systems (ETTIS 2023), 23<sup>rd</sup> – 24<sup>th</sup> February, 2023, Centre for Development of Advanced Computing(CDAC) Noida in association with the Automatic Control, Computers & Electronics Department, Faculty of Mechanical and Electrical Engineering, Petroleum-Gas University of Ploiesti, Romania, and the University of Haute-Alsace, France, India.

60. Member, Program Committee, 3<sup>rd</sup> International Conference on Internet of Things & Embedded Systems (IoTE 2022), 23<sup>rd</sup> - 24<sup>th</sup> December, 2022, Sydney, Australia.
61. Member, Technical Program Committee, International Conference on Automation, Robotics and Computer Engineering (ICARCE-2022), 16<sup>th</sup> - 17<sup>th</sup> December, 2022, Huazhong University of Science and Technology, Wuhan, China.
62. Member, Technical Program Committee, 9<sup>th</sup> IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON-2022), 2<sup>nd</sup> - 4<sup>th</sup> December, 2022, Indian Institute of Information Technology Allahabad, India.
63. Member, Technical Program Committee, International Conference on Innovations in Data Analytics, 29<sup>th</sup> - 30<sup>th</sup> November, 2022, Eminent College of Management and Technology (ECMT), West Bengal, India.
64. Member, Technical Program Committee, 2022 IEEE Silchar Subsection Conference, 4<sup>th</sup> - 6<sup>th</sup> November, 2022, National Institute of Technology Silchar, Assam, India.
65. Member, Technical Program Committee, 7<sup>th</sup> IAPR International Conference on Computer Vision & Image Processing, 4<sup>th</sup> - 6<sup>th</sup> November, 2022, Visvesvaraya National Institute of Technology Nagpur, Nagpur, Maharashtra, India.
66. Member, Technical Program Committee, 2022 IEEE 2<sup>nd</sup> International Conference on Computer Science, Engineering and Applications, 8<sup>th</sup> September, 2022, Gandhi Institute of Engineering and Technology University, Gunupur, Odisha, India.
67. Member, Technical Program Committee, International Conference on Computer Vision and Machine Intelligence (CVMI-2022), 12<sup>th</sup> - 13<sup>th</sup> August, 2022, Department of Information Technology, Indian Institute of Information Technology Allahabad, India.
68. Member, Technical Program Committee, 7<sup>th</sup> Annual International Conference on Information System and Artificial Intelligence, 13<sup>th</sup> - 15<sup>th</sup> May, 2022, Wuhan, China.
69. Member, Technical Program Committee, International Conference on Advancements in Interdisciplinary Research (AIR-2022), 6<sup>th</sup> - 7<sup>th</sup> May, 2022, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.
70. Member, National Advisory Committee, International Conference on Communication, Computing and Industrial Engineering (ICCCIE-2022), 26<sup>th</sup> - 27<sup>th</sup> April, 2022, IIITM College of Engineering, Greater Noida, India.
71. Member, Technical Program Committee, International Conference on Recent Advancements and Innovation in Computing, Communications, and Information Technology (ICRAIC21T), 22<sup>nd</sup> - 24<sup>th</sup> April, 2022, NRI Institute of Technology, Agiripalli, India.
72. Member, Technical Program Committee, IEEE Bombay Section Signature Conference (IBSSC-2021), 18<sup>th</sup> - 20<sup>th</sup> November, 2021, ABV Indian Institute of Information Technology and Management, Gwalior, India.
73. Member, Technical Program Committee, 5<sup>th</sup> International Conference on Computer Science and Application Engineering (CSAE), 19<sup>th</sup> - 21<sup>st</sup> October, 2021, Sanya, China.
74. Member, Technical Program Committee, 2021 International Mobile, Intelligent and Ubiquitous Computing Conference (MIUCC), 26<sup>th</sup> - 27<sup>th</sup> May, 2021, Misr International University, Cairo, Egypt.
75. Member, Technical Program Committee, 2021 IEEE Second International Conference on Control, Measurement and Instrumentation (CMI), 8<sup>th</sup> - 10<sup>th</sup> January, 2021, Department of Applied Physics, University of Calcutta, Kolkata, India.

76. Member, Technical Program Committee, International Conference on IoT and its application (ICIA 2020), 26<sup>th</sup> – 27<sup>th</sup> December, 2020, National Institute of Technology, Jamshedpur, India.
77. Member, Technical Program Committee, Asia Digital Image Processing (ADIP) Conference, 18<sup>th</sup> – 20<sup>th</sup> December, 2020, Kyoto, Japan.
78. Member, Technical Program Committee, 5<sup>th</sup> IAPR International Conference on Computer Vision and Image Processing, 4<sup>th</sup> – 6<sup>th</sup> December, 2020, Indian Institute of Information Technology, Allahabad, India.
79. Member, Technical Program Committee, 5<sup>th</sup> IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE 2020), 1<sup>st</sup> – 3<sup>rd</sup> December, 2020, Jaipur, India.
80. Member, Technical Program Committee, Workshop on Machine Learning Deep Learning and Computational Intelligence for Wireless Communication (MDCWC 2020), 22<sup>nd</sup> – 24<sup>th</sup> October, 2020, National Institute of Technology Tiruchirappalli, India.
81. Member, Technology Advisory Committee, International Conference on IoT, High Performance and Edge Computing (ICIHPE), 14<sup>th</sup> – 18<sup>th</sup> October 2020, Global Technology Forum, Chennai, Tamil Nadu, India.
82. Member, Technical Program Committee, International Conference on Contemporary Computing and Applications (IC3A 2020), 5<sup>th</sup> – 7<sup>th</sup> February, 2020, Dr. A.P.J. Abdul Kalam Technical University, Lucknow, India.
83. Member, Technical Review Committee, International Conference on Modeling, Simulation and Intelligent Computing (MoSICom), 29<sup>th</sup> – 31<sup>st</sup> January, 2020, Birla Institute of Technology & Science, Dubai.
84. Member, International Advisory Board, 24<sup>th</sup> World Conference on Applied Science, Engineering and Technology (WCASET), 26<sup>th</sup> – 27<sup>th</sup> November, 2019, Kuala Lumpur, Malaysia.
85. Member, Technical Programme Committee, International Conference on Computational Intelligence in Data Mining (ICCIDM 2014), 20<sup>th</sup> – 21<sup>st</sup> December, 2014, Veer Surendra Sai University of Technology (VSSUT), Burla, India.
86. Member, Technical Programme Committee, 9<sup>th</sup> IEEE International Conference on Industrial and Information Systems (ICIIS 2014), 15<sup>th</sup> – 17<sup>th</sup> December, 2014, Atal Bihari Vajpayee Indian Institute of Information Technology and Management, Gwalior, India.
87. Member, Technical Program Committee, International Conference on Computational Advancement in Communication Circuits and Systems (ICCACCS 2014), 30<sup>th</sup> October-1<sup>st</sup> November, 2014, Narula Institute of Technology, Kolkata, India.
88. Member, Technical Programme Committee, International Conference on Advances in Electronics, Computers and Communications (ICAECC 2014), 10<sup>th</sup> -11<sup>th</sup> October, 2014, Reva University, Bangalore, India.
89. Member, Technical Programme Committee, International Conference on Signal Processing and Integrated Networks (SPIN 2014), 20<sup>th</sup> – 21<sup>st</sup> February, 2014, Amity University, Noida, India.
90. Member, Technical Programme Committee, International Symposium on Knowledge-Intensive Software Engineering (KISE 2013), 22<sup>nd</sup> – 25<sup>th</sup> August, 2013, Mysore, India.

91. Member, Technical Program Committee, 2<sup>nd</sup> Students' Conference on Engineering and Systems (SCES-2013), 12<sup>th</sup> -14<sup>th</sup> April, 2013, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.
92. Member, Technical Program Committee, 2<sup>nd</sup> International Conference on Soft Computing for Problem Solving (SocProS 2012), 28<sup>th</sup> – 30<sup>th</sup> December, 2012, Institute of Engineering and Technology, JK Lakshmipat University (JKLU), Jaipur, India.
93. Member, International Program Committee, 2<sup>nd</sup> World Congress on Information and Communication Technologies (WICT 2012), 30<sup>th</sup> October – 2<sup>nd</sup> November, 2012, Machine Intelligence Research Labs (MIR Labs) and Indian Institute of Information Technology and Management, Trivandrum, Kerala, India.
94. Member, Technical Program Committee, International Program Committee, Second International Conference on Digital Information and Communication Technology and its Applications (DICTAP 2012), 16<sup>th</sup> – 18<sup>th</sup> May, 2012, University of the Thai Chamber of Commerce(UTCC), Bangkok, Thailand.
95. Member, Technical Program Committee, Students' Conference on Engineering and Systems (SCES-2012), 16<sup>th</sup> -18<sup>th</sup> March, 2012, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.
96. Member, Technical Program Committee, International Conference on Soft Computing for Problem Solving (SocProS 2011), 20<sup>th</sup> – 22<sup>nd</sup> December, 2011, Indian Institute of Technology Roorkee, Roorkee, India.
97. Member, Technical Program Committee, 8<sup>th</sup> IEEE International Conference on Information, Communications and Signal Processing (ICICS 2011), 13<sup>th</sup> – 16<sup>th</sup> December, 2011, Singapore.
98. Member, Technical Program Committee, International Program Committee, World Congress on Information and Communication Technologies (WICT 2011), 11<sup>th</sup> – 14<sup>th</sup> December, 2011, Machine Intelligence Research Labs (MIR Labs) and University of Mumbai, Mumbai, India.
99. Member, Technical Program Committee, National Advisory Committee, International Conference on Advances in Computing and Communications (ICACC 2011), April 2011, National Institute of Technology, Hamirpur, India.

## 11. ADMINISTARTIVE RESPONSIBILITY

1. **Chairperson**, International Students Cell, NIT Rourkela from Dec 2023 to till date.
2. **Head**, Career Development Center, NIT Rourkela from July 2019 to July 2022.
3. **Chairman**, Skill Hub Initiative Committee for the year 2022.
4. **Chairman**, Apex Committee, Formulation of SOP to bring back students for the year 2021.
5. **Member**, Fast Pace Programme Committee for the year 2020.
6. **Member**, Committee regarding Reallocation of Department Space from 2017 to till date.
7. **Member**, Biometric Machine Installation Committee from 2017 to till date.
8. **Member**, Academic Programme Oversight Committee for the institute from 2009 to 2012.
9. **Head**, Instrumentation Group of the department from 2013 to till date.
10. **Member**, Departmental Academic Programme Oversight Committee from 2021 to till date.

11. **Prof-in-Charge (PIC)**, Process Control Lab for the department from July 2009 to till date.
12. **Chairman**, Departmental Purchase Committee for the year 2017-2018, and 2023 to till date.
13. **Member**, Purchase Committee of the department from July 2014 to 2017, and 2019 to 2022.
14. **Member**, Department Research Committee from July 2014 to till date.
15. **Member**, Departmental Academic Committee from 2017 to till date.
16. **Prof-in-Charge (PIC)**, Virtual and Intelligent Instrumentation Lab for the department from Feb 2012 to till date.
17. **Faculty Advisor**, M. Tech (E&I) of the department from July 2012 to till date.
18. **Member**, Departmental Academic Committee from 2015 to till date.
19. **Member**, Department promotion subcommittee for non-teaching employees for the year 2019.
20. **Member**, Joint Seat Allocation Authority (JoSSA) Committee for the year 2017.
21. **Member**, Institute Standing Disciplinary Committee from 2015 to 2017.
22. **Member**, Purchase Committee for TEL Equipment from 2015 to 2016.
23. **Prof-in-Charge (PIC)**, Departmental Infrastructure from 2014 to 2016.
24. **Dept. Coordinator for Accreditation** for the year 2013-2014.
25. **Member**, Departmental Curriculum Development Committee for the year 2013-2014.
26. **Chairman (PG & R)** for the department for three consecutive years from 2010 to 2013.
27. **Teacher Guardian** of B. Tech (E&I) for the department for three consecutive years from 2009 to 2012.
28. **Prof-in-Charge (PIC)**, Direct Purchase for the department for two consecutive financial years from 2009 to 2011.
29. **Prof-in-Charge (PIC)**, Research Programme (UG) for the department for two consecutive years from 2009 to 2011.
30. **Prof-in-Charge (PIC)**, Training and Placement for the department for two consecutive years from 2009 to 2011.

## 12. ACADEMIC OUTREACH ACTIVITIES

1. **Executive Committee Member**, IEEE GRSS Kolkata Chapter, 2025.
2. **Expert Member** of the AICTE Expert Visit Committee, 2025.
3. **Expert** in the Interview Board for faculty selection at National Institute of Technology Agartala, 18<sup>th</sup> January 2024.
4. **Expert**, Academic Committee, Sambalpur University Institute of Information Technology, Burla, for the academic year 2023-24 to 2024-25.
5. **Nomination Chair**, IEEE GRSS Kolkata Chapter, 2024.
6. **Nomination Chair**, IEEE GRSS Kolkata Chapter, 2023.
7. **Expert Member**, Faculty Selection Committee, Department of Electronics and Instrumentation Engineering, Guru Ghasidas Vishwavidyalaya (A Central University), 25<sup>th</sup> October 2024, Bilaspur, Chhattisgarh.

8. **AICTE Expert** in Selection Committee, Harcourt Butler Technical University (HBTU), 13<sup>th</sup> – 17<sup>th</sup> September 2023.
9. **Expert Member** of the AICTE Expert Visit Committee, 2023.
10. **External Examiner**, Board of Studies, Department of Electronics and Instrumentation Engineering, Odisha University of Technology and Research (OUTR), 2023 to date.
11. **External Expert**, Project Staff Selection, Institute of Minerals & Materials Technology (IMMT), Bhubaneswar, India, 24<sup>th</sup> December 2022.
12. **Nomination Chair**, IEEE GRSS Kolkata Chapter, 2022.
13. **External Expert**, Board of Studies, Department of Electronics and Communication Engineering, Sambalpur University Institute of Information Technology, Odisha, India, 2021 to date.
14. **External Expert**, Faculty Selection Board, C V Raman Global University, Bhubaneswar, Odisha, India.
15. **Expert Member**, Selection Committee, Department of Electronics and Communication Engineering, Biju Patnaik University of Technology (BPUT), Rourkela, Odisha, India, 16<sup>th</sup> August 2022.
16. **External Examiner**, Department of Electronics and Instrumentation Engineering, Odisha University of Technology and Research (OUTR), Bhubaneswar, India, 29<sup>th</sup> July, 2022.
17. **External Examiner**, Department of Electronics and Communication Engineering, Indira Gandhi Institute of Technology, Sarang, India, 31<sup>st</sup> May, 2022.
18. **Expert Member**, Screening Committee, Department of Electronics and Computer Engineering, National Institute of Advanced Manufacturing Technology, Ranchi, India, 24<sup>th</sup> February, 2022.
19. **Session Chair** in 3<sup>rd</sup> Asian Digital Image Processing Conference, 17<sup>th</sup> – 19<sup>th</sup> December, 2021, Tokyo, Japan.
20. **Executive Committee Member**, IEEE GRSS Kolkata Chapter, 2021.
21. **Session Chair** in 2<sup>nd</sup> International Conference on Advanced Communication Technologies and Signal Processing (IEEE-ACTS), 15<sup>th</sup> – 17<sup>th</sup> December, 2021, National Institute of Technology, Rourkela, India.
22. **Session Chair** in 2021 IEEE Workshop on “Spatial Geoinformatics using Machine Learning Approaches,” GRSS Kolkata Chapter in collaboration with GRSS Bombay Chapter, 24<sup>th</sup> September, 2021, Kolkata, India.
23. **Expert Member**, Selection Committee, Department of Electronics and Telecommunication Engineering, Indira Gandhi Institute of Technology, Sarang, India, 3<sup>rd</sup> August, 2021.
24. **Expert Member**, Screening-cum-Scrutiny Committee, Biju Patnaik University of Technology (BPUT), Rourkela, Odisha, India, 9<sup>th</sup> July, 2021.
25. **Member**, Research Council of University (RCU), Biju Patnaik University of Technology (BPUT), Rourkela, Odisha, India, from April, 2021 to till date.
26. **AICTE Representative**, Board of Governors, Government College of Engineering, Keonjhar, Odisha, India, from April, 2021 to till date.
27. **Member**, Board of Studies, Birla Institute of Technology, Mesra, India, 2021 to till date.

28. **Primary Evaluator** for Toycathon 2021 conducted by Ministry of Education's Innovation Cell, India.
29. **Session Chair** in 9<sup>th</sup> International Conference on Computing, Communication and Sensor Networks (CCSN 2020), 17<sup>th</sup> – 18<sup>th</sup> October, 2020, Kolkata, India.
30. **Session Chair** in International Symposium on Smart Electronics Systems (IEEE-iSES, formerly IEEE-iNIS), 16<sup>th</sup> – 18<sup>th</sup> December, 2019, National Institute of Technology, Rourkela, India.
31. **Expert Member**, Board of Studies Meeting for Finalization of Syllabus of Instrumentation and Electronics Engineering on 9<sup>th</sup> March, 2019, College of Engineering and Technology, Bhubaneswar, India.
32. **Expert Member**, Selection Committee, Biju Patnaik University of Technology (BPUT), Odisha, India, 2018.
33. **Session Chair** in National Conference on "VLSI Design, Signal Processing, Image Processing Communication and Embedded Systems", 19<sup>th</sup> July, 2018, Jawaharlal Technological University, Kakinada, Andhra Pradesh, India.
34. **External Expert** for the Final Evaluation of B.Tech. Projects by Siksha 'O' Anusandhan University, Bhubaneswar, India, 14<sup>th</sup> -15<sup>th</sup> May, 2016.
35. **Expert Member** in Board of Studies Meeting for finalization of course structure of Instrumentation and Electronics Engineering Discipline by Biju Patnaik University of Technology, Odisha, India, 30<sup>th</sup> April - 1<sup>st</sup> May, 2016.
36. **External Expert** on the occasion of Research Week 2016, 16<sup>th</sup> - 18<sup>th</sup> March, 2016, Gujarat Technological University, Ahmedabad, India.
37. **External Expert** for Principals of Govt. Polytechnic and ITI, Bihar Public Service Commission, Patna, 2015.
38. **Industrial Track Chair and Session Chair** in International Conference on "Advanced Computing, Networking and Informatics", 24<sup>th</sup> - 26<sup>th</sup> June, 2014, Kolkata, India.
39. **Academic Visitor** to the Department of Electrical and Computer Engineering, San Diego State University, USA, 2013.
40. **Session Chair** in International Conference on "Emerging Trends, Technology and Research", 21<sup>st</sup> – 22<sup>nd</sup> September, 2013, Nagpur, India.
41. **Session Chair** in International Conference on "Advance Computing and Communication", 16<sup>th</sup> -17<sup>th</sup> March, 2013, Ranchi, India.
42. **Academic Visitor** to the Institute for Automation, University of Leoben, Austria by Prof. Paul O' Leary from 8<sup>th</sup> -12<sup>th</sup> November, 2010.

### 13. CONFERENCE ORGANIZED

- **Convenor**, National Conference on Intelligent Systems, IoT, and Wireless Communication for the Society (IIWCS-2024), 16<sup>th</sup> -17<sup>th</sup> February, 2024, National Institute of Technology, Rourkela, India.
- **General Chair**, International Conference on Electronic Systems (ICES -2011), 7<sup>th</sup> – 9<sup>th</sup> January, 2011, National Institute of Technology, Rourkela, India.

## 14. TECHNICAL TALKS

1. Invited as Keynote Speaker in 3rd International Conference on Automation, Robotics and Computer Engineering (ICARCE 2024), held during 18<sup>th</sup> – 19<sup>th</sup> December, 2025 (Online).
2. Invited as Keynote Speaker in 15th International Conference on Electronics, Communications and Networks (CECNet 2025), held during 24<sup>th</sup>-26<sup>th</sup> November, 2025, Hong Kong.
3. Invited as Keynote Speaker in 2nd Global Summit on Analog Electronics, Sensors and Signal Processing (GSAESS 2025), held during 08<sup>th</sup> – 10<sup>th</sup> September, 2025, Kuala Lumpur, Malaysia.
4. Invited as Keynote Speaker in 3rd International Conference on Mechatronics and Mechanical Engineering (ICMME2024) held during 24<sup>th</sup>– 22<sup>th</sup> August, 2025, Dalian, China.
5. Invited as Keynote Speaker in the International Workshop on Advanced Sensing and Geo-Spatial Intelligence (ASGT 2025) held during 22<sup>nd</sup>-24<sup>th</sup> August, 2025, Nanchang, China.
6. Invited as Keynote Speaker in 4th International Conference on Mechatronics and Mechanical Engineering (ICMME 2025) held during 22<sup>nd</sup>-24<sup>th</sup> August, 2025, Dalian, China.
7. Invited as Keynote Speaker 6th International Conference on Advances in Electrical Engineering and Computer Applications (AEECA 2025) held during August 22-24, 2025, Dalian, China.
8. Invited as Keynote Speaker in 2nd International Conference on Intelligent Computing and Robotics (ICICR 2025) held during May 16-18, 2025, Dalian, China.
9. Invited to deliver a Talk for the Two-Week Faculty Development Program organized by Sambalpur University Institute of Information Technology (SUIIT) during 24<sup>th</sup> February - 7th March 2025, Odisha, India.
10. Invited as Keynote Speaker in 3rd International Conference on Automation, Robotics and Computer Engineering (ICARCE 2024), held during 17<sup>th</sup> – 18<sup>th</sup> December, 2024 (Online).
11. Invited to deliver a Talk in 6<sup>th</sup> Asia Digital Image Processing Conference, 14<sup>th</sup> - 16<sup>th</sup> December, 2024, Japan.
12. Invited to deliver a Talk in 5<sup>th</sup> International Conference on Advanced in Electrical Engineering and Computer Applications (AEECA2024), 16<sup>th</sup> -18<sup>th</sup> August, 2024, Dalian, China.
13. Invited to deliver a Talk in 6<sup>th</sup> Asia Conference on Machine Learning and Computing (ACMLC-2024), 26<sup>th</sup> -28<sup>th</sup> July, 2024, Bangkok, Thailand.
14. Invited to deliver a Talk in Online Faculty Development Programme (FDP) on Implementing IoT and Deep Learning Applications on Edge Devices, 15th July 2024 – 25th July, 2024, Electronics & ICT Academy, NIT Warangal.
15. Invited to deliver a Talk in Asia Conference on Trends in Image Processing (ATIP-2024), 21<sup>st</sup> – 23<sup>rd</sup> June, 2024, London, United Kingdom.



16. Invited as Keynote Speaker in 3rd International Conference on Mechatronics and Mechanical Engineering (ICMME2024) held during 24<sup>th</sup>– 22<sup>th</sup> May, 2024, Xi'an, China.
17. Invited to deliver a Talk in All India National Seminar on Artificial Intelligence and Machine Learning in Materials Engineering for Environment (AIMLMEE-2024), 18<sup>th</sup> - 19<sup>th</sup> May, 2024, The Institution of Engineerings (India), National Institute of Technology Rourkela Campus, Rourkela, India.
18. Invited as Keynote Speaker in National Workshop on “Remotely Sensed Data Analysis for Sustainable Environment (RSDASE)” organized jointly by IIIT Bhubaneswar, and IEEE Geoscience & Remote Sensing Society (Kolkata Chapter) held during 10<sup>th</sup> – 11<sup>th</sup> May, 2024, Bhubaneswar, India.
19. Invited as Keynote Speaker in SERB sponsored Two Days National Conference on Machine Learning in Healthcare Applications (MLHA 2024) held during 18<sup>th</sup> -19<sup>th</sup> April, 2024, Guru Nanak Institute of Technology, Kolkata, India.
20. Invited to deliver a Guest Lecture to Asian Academic Institutions, 2024.
21. Invited to deliver a Talk in 5<sup>th</sup> Asia Digital Image Processing Conference, 15<sup>th</sup> - 17<sup>th</sup> December, 2023, Japan.
22. Invited to deliver a Talk in a Workshop on “Machine Learning: An Industry Academia Initiative, held during 11<sup>th</sup> - 15<sup>th</sup> December, 2023, Department of Electronics and Communication Engineering, National Institute of Technology Rourkela, India.
23. Invited to deliver a Talk on “Video-based Intrusion Detection System using Deep Learning Techniques” at the 3rd International Conference on Engineering, Social Sciences and Humanities (ICESSU 2023) organized by the Institute for Engineering Research and Publication (IFERP) at Manila, Philippines on 30<sup>th</sup> March 2023.
24. Invited to deliver a Talk on “Sensors and Actuators for Internet of Things (IoT)” in AICTE-ATAL Sponsored Two-week Faculty Development Program on Hardware Security for Internet of Things on 22<sup>nd</sup> November 2022, Department of Electronics and Communication Engineering, National Institute of Technology, Rourkela, India.
25. Invited to deliver Talks on “Intelligent Video Surveillance System using Deep Learning Techniques” to Faculties and Students of the Department of Information Technologies and Big Data Analysis at Financial University under the Government of the Russian Federation on 27<sup>th</sup> October 2022 and 23<sup>rd</sup> May 2022 respectively.
26. Invited to deliver a Talk in International Conference on Sustainability: Integrated and Scientific Approach held on 4<sup>th</sup> August, 2022, University of Mumbai, Mumbai, Maharashtra.
27. Invited to deliver a Talk on “Video based Intrusion Detection System using Deep Learning Techniques” in International E-Conference on Big Data, Data Mining and AI held on 27<sup>th</sup> June, 2022.
28. Invited to deliver a Talk on “Sensors and Actuators” in the Professional Development Programme on IoT and Machine Intelligence for Industry 4.0 held on 7<sup>th</sup> June 2022, Department of Electronics and Communication Engineering, National Institute of Technology, Rourkela.
29. Invited to deliver a Talk on “How to Improve Training and Placement Cell” in Skill Academy Campus Program by Quantel.in and Testbook held on 14<sup>th</sup> May, 2022.

30. Invited to deliver a Talk in 3<sup>rd</sup> Asian Digital Image Processing Conference held during 17<sup>th</sup> – 19<sup>th</sup> December, 2021, Tokyo, Japan.
31. Invited to deliver a Talk on “Image-based non-invasive dimension measurement of real-world objects” in AICTE Training & Learning (ATAL) online Faculty Development Programme (FDP) on Role of Measurement & Control in Automation in Department of Electrical and Electronics Engineering, Birla Institute of Technology, Mesra, India, 29<sup>th</sup> June, 2021.
32. Invited to deliver a Talk on “3D Surface Reconstruction of Real-World Object”, Department of Electronics Engineering, Madhav Institute of Technology & Science, Gwalior, India, 21<sup>st</sup> November, 2020.
33. Invited to deliver a Talk in ATAL Sponsored Faculty Development Programme on "Machine Learning for Smart City Applications " held during 1<sup>st</sup> - 5<sup>th</sup> October, 2020, School of Electronics, Kalinga Institute of Industrial Technology, Bhubaneswar, India.
34. Invited to deliver a Talk in TEQIP-III Sponsored National Workshop on “Applications of NI LabVIEW in Electronics and Communication Engineering (ANECE-2019)” held during 7<sup>th</sup> – 12<sup>th</sup> June, 2019, Department of Electronics and Communication Engineering, National Institute of Technology Jamshedpur, Jharkhand, India.
35. Invited to deliver a Talk in TEQIP - III Sponsored Faculty Development Programme on "Signal Processing in Instrumentation and Communication - Recent Advances" held during 25<sup>th</sup> - 30<sup>th</sup> March, 2019, College of Engineering and Technology, Bhubaneswar, India.
36. Invited to deliver a Talk in National Conference on VLSI Design, Signal Processing, Image Processing, Communication and Embedded Systems held on 19<sup>th</sup> July, 2018, Jawaharlal Technological University, Kakianada, Andhra Pradesh, India.
37. Invited to deliver a Talk in AICTE Sponsored Faculty Development Programme on "Application of Advanced Signal Processing for Operation Control and protection of Modern Power System with Integration of Large Scale Sustainable Energy Sources" held on 29<sup>th</sup> November, 2017, Indira Gandhi Institute of Technology, Sarang, India.
38. Invited to deliver a Talk in QIP Short Term Course on "Distributed Estimation and Control in Networked Systems" on 10<sup>th</sup> February, 2017, Veer Surendra Sai University of Technology, Burla, Odisha, India.
39. Invited to deliver a Talk in TEQIP Sponsored Faculty Development Programme on "Recent Advances in Control and Instrumentation" held during 21<sup>st</sup> - 26<sup>th</sup> December, 2015, College of Engineering and Technology, Bhubaneswar, India.
40. Invited to deliver a Talk in National Workshop on “Recent Advancements in Computer Science and Electronics Engineering for Information Technology" held during 15<sup>th</sup> – 17<sup>th</sup> January, 2015, Sambalpur University Institute of Information Technology, Sambalpur, Odisha, India.
41. Invited as Keynote Speaker in International Conference on Emerging Trends, Technology and Research held during 21<sup>st</sup> – 22<sup>nd</sup> September, 2013, Nagpur, India.
42. Invited to deliver a Talk in National Conference on Emerging Trends in Information Technology on 17<sup>th</sup> August 2013, Lakshmi Narain College of Technology, Bhopal, India.

43. Invited to deliver Talk in International Conference on Advance Computing and Communication held during 16<sup>th</sup> – 17<sup>th</sup> March, 2013, Ranchi, India.
44. Invited to deliver a Talk in the "Paper Meeting" of the Institution of Engineers (India) on 27<sup>th</sup> July, 2012, National Institute of Technology Rourkela, India.
45. Invited to deliver a Talk in National Conference on “Advancements in Signal Processing and Integrated Networks” held during 24<sup>th</sup> - 25<sup>th</sup> February, 2011, Amity School of Engineering and Technology, Noida, India.

## 15. CONFERENCES ATTENDED

1. 22<sup>nd</sup> International Symposium on Communications and Information Technologies (ISCIT), 16<sup>th</sup> - 18<sup>th</sup> October, 2023, Sydney, **Australia**.
2. IEEE International Conference on Emerging Technologies and Innovative Business Practices for the Transformation of Societies (IEEE EmergiTech 2016), 1<sup>st</sup> – 6<sup>th</sup> August 2016, **Mauritius**.
3. International Conference on Computer Communication and Informatics (ICCCI), 4<sup>th</sup> – 6<sup>th</sup> January, 2013, Chennai, India.
4. International Conference on Emerging Trends, Technology and Research (ICETTR 2013), 21<sup>st</sup> – 22<sup>nd</sup> September, 2013, Nagpur, India.
5. IEEE 8<sup>th</sup> International Conference on Information, Communications and Signal Processing (ICICS 2011), 13<sup>th</sup> -16<sup>th</sup> December, 2011, **Singapore**.
6. IEEE International Conference on Virtual Environment, Human-Computer Interfaces and Measurement Systems (VECIMS 2010), 6<sup>th</sup> – 8<sup>th</sup> September, 2010, Taranto, **Italy**.
7. International Conference on Instrumentation (ICI 2010), 21<sup>st</sup> – 23<sup>rd</sup> January, 2010, Pune, India.
8. IEEE Symposium Series on Computational Intelligence (SSCI 2009), 30<sup>th</sup> March – 2<sup>nd</sup> April, 2009, Nashville, TN, **USA**.

## 16. PUBLICATIONS

### A. Books / Edited Books

- [1] Ashutosh Kumar Dubey, Abhishek Kumar, Fausto Pedro García Márquez, Arun Lal Srivastav, **Umesh Chandra Pati**, and Vicente García-Díaz, "Computer Vision and Machine Intelligence for Renewable Energy Systems", Elsevier, ISBN print: 978-0-443-28947-7, 2024. (DOI: 10.1016/C2023-0-50068-0).
- [2] **Umesh Chandra Pati**, "3-D Surface Geometry and Reconstruction: Developing Concepts and Applications", IGI Global, ISBN print: 978-1-46660-114-7, 2012 (DOI: 10.4018/978-1-4666-0113-0).
- [3] **Umesh Chandra Pati**, Pranab Kumar Dutta, and Alok Barua, "3-D Reconstruction with Feature Level Fusion: Using Range and Intensity Images of an Object", Lambert Academic Publishing, ISBN print: 978-1-46660-113-0, 2010.

## ***B. Book Chapters***

- [1] Prajnyajit Mohanty, **Umesh Chandra Pati**, and Kamalakanta Mahapatra, "EnSlight: Energy Autonomous LoRaWAN based, IoT-enabled, Real-Time Street Light Management System for Smart Cities and Smart Villages" in *Artificial Intelligence Techniques for Sustainable Development*, 2024, CRC Press (ISBN print: 9781032774954). (Accepted).
- [2] Prajnyajit Mohanty, Krityeeprava Subhadarshini, Rashmiranjan Nayak, **Umesh Chandra Pati**, and Kamalakanta Mahapatra, "Exploring data-driven multivariate statistical models for the prediction of solar energy" In *Computer Vision and Machine Intelligence for Renewable Energy Systems*, 2024, pp. 85-101, 2024, Elsevier (DOI: 10.1016/B978-0-443-28947-7.00005-7).
- [3] Rashmiranjan Nayak, Prashant Dwivedi, and **Umesh Chandra Pati**, "YOLO-IP: An Efficient and Robust Deep Learning Framework to Detect Insect Pests for Agricultural Applications." *Artificial Intelligence Tools and Technologies for Smart Farming and Agriculture Practices*, pp. 133-158, 2023, IGI Global (DOI: 10.4018/978-1-6684-8516-3.ch008).
- [4] Naba Krushna Sabat, Rashmiranjan Nayak, **Umesh Chandra Pati**, and Santos Kumar Das, "A Deep Learning-Based Vector Autoregressive-Gated Recurrent Unit Hybrid Model for Long-Term Forecasting of Weather Parameters for Smart Farms." In *Artificial Intelligence Tools and Technologies for Smart Farming and Agriculture Practices*, pp. 159-183, 2023, IGI Global (DOI: 10.4018/978-1-6684-8516-3.ch009).
- [5] Rashmiranjan Nayak, Mogarala Tejoyadav, Prajnyajit Mohanty, and **Umesh Chandra Pati**, "Water Quality Time-Series Modeling and Forecasting Techniques," In R. Gupta, A. Jain, J. Wang, V. Singh, & S. Bharti (Ed.), *Artificial Intelligence of Things for Weather Forecasting and Climatic Behavioral Analysis*, pp. 177-200, 2022, IGI Global (DOI: <https://doi.org/10.4018/978-1-6684-3981-4.ch012>).

## ***C. International Journals***

- [1] Rashmiranjan Nayak, **Umesh C. Pati**, and Santos Kumar Das, "A Panoramic Review on Cutting-Edge Methods for Video Anomaly Localization" in *IEEE Access*, Dec. 2024 (DOI: <https://doi.org/10.1109/ACCESS.2024.3510039>).
- [2] Prajnyajit Mohanty, **Umesh C. Pati**, K. Mahapatra and S. P. Mohanty, "bSlight 2.0: Battery-free Sustainable Smart Street Light Management System," in *IEEE Transactions on Sustainable Computing*, pp. 1-15, Jun. 2024 (DOI: 10.1109/TSUSC.2024.3408630).
- [3] Prajnyajit Mohanty, **Umesh C. Pati**, K. Mahapatra and S. P. Mohanty, "bSlight: Battery-less Energy Autonomous Street Light Management System for Smart City," in *IEEE Transactions on Sustainable Computing*, Vol. 9, No. 1, pp. 100-114, Jan. – Feb. 2024 (DOI: 10.1109/TSUSC.2023.3310884).
- [4] Rashmiranjan Nayak, **Umesh C. Pati**, and Santos Kumar Das, "A comprehensive review of datasets for detection and localization of video anomalies: a step towards data-centric artificial intelligence-based video anomaly detection," in *Multimedia Tools and Applications*, Dec. 2023 (DOI: <https://doi.org/10.1007/s11042-023-17889-z>).

- [5] V. N. Sujit Vudattu and **Umesh C. Pati**, "Change Detection in Synthetic Aperture Radar Images based on a Spatial Pyramid Pooling Attention Network (SPPANet)," in *Remote Sensing Letters*, Vol. 14, No. 11, pp. 1139-1149, Oct. 2023 (DOI: /10.1080/2150704X.2023.2273244).
- [6] Naba Krushna Sabat, Rashmiranjan Nayak, Harshit Srivastava, **Umesh C. Pati**, and Santos Kumar Das, "Prediction of Meteorological Parameters Using Statistical Time Series Models: A Case Study," in *Internal Journal of Global Warming*, Vol. 31, No. 1, pp. 128-149, Aug. 2023 (DOI: 10.1504/IJGW.2023.133547).
- [7] Mayank Mishra and **Umesh C. Pati**, "A classification framework for Autism Spectrum Disorder detection using sMRI: Optimizer based ensemble of deep convolution neural network with on-the-fly data augmentation," in *Biomedical Signal Processing and Control*, Vol. 84, pp. 1-13, Jul.2023 (DOI: 10.1016/j.bspc.2023.104686)
- [8] Naba Krushna Sabat, **Umesh C. Pati**, and Santos Kumar Das, "ABTCN: an efficient hybrid deep learning approach for atmospheric temperature prediction," in *Environmental Science and Pollution Research*, pp. 1-18, 2023 (DOI: 10.1007/s11356-023-27985-0).
- [9] Sourabh Paul and **Umesh C. Pati**, "High-resolution optical-to-SAR image registration using mutual information and SPSA optimization," in *IET Image Processing*, Vol. 15, No. 6, pp. 1319-1331, May. 2021 (DOI: <https://doi.org/10.1049/ipr2.12107>).
- [10] Sourabh Paul and **Umesh C. Pati**, "A comprehensive review on remote sensing image registration." in *International Journal of Remote Sensing*, Vol. 42, No. 14, pp. 5400-5436, Apr. 2021 (DOI: 10.1080/01431161.2021.1906985).
- [11] Rashmiranjan Nayak, **Umesh C. Pati**, and Santos Kumar Das, "A comprehensive review on deep learning-based methods for video anomaly detection," in *Image and Vision Computing*, Vol. 106, pp. 1-19, Feb. 2021 (DOI: <https://doi.org/10.1016/j.imavis.2020.104078>).
- [12] Divya S. V., Sourabh Paul and **Umesh C. Pati**, "Structure tensor-based SIFT algorithm for SAR image registration," in *IET Image Processing*, Vol. 14, No. 5, pp. 929-938, Apr. 2020 (DOI: 10.1049/iet-ipr.2019.0568).
- [13] Sankata B. Prusty, Sridhar Seshagiri, **Umesh. C. Pati** and Kamala K. Mahapatra, "Sliding mode control of coupled tank systems using conditional integrators," in *IEEE/CAA Journal of Automatica Sinica*, Vol. 7, No. 1, pp. 118-125, Jan. 2020 (DOI: 10.1109/JAS.2019.1911831).
- [14] Sourabh Paul and **Umesh C. Pati**, "Automatic Optical-to-SAR Image Registration using a Structural Descriptor", *IET Image Processing*, Vol. 14, pp. 62-73, Jan. 2020 (DOI: 10.1049/iet-ipr.2019.0389).
- [15] Achala Pandey and **Umesh C. Pati**, "Image Mosaicing: A Deeper Insight", *Image and Vision Computing*, Vol. 89, pp. 236-257, Sept. 2019 (DOI: <https://doi.org/10.1016/j.imavis.2019.07.002>).
- [16] Sourabh Paul and **Umesh C. Pati**, "SAR Image Registration Using an Improved SAR-SIFT Algorithm and Local Matching," *IEEE Journal of Selected Topics in Applied Earth Observations*

- and Remote Sensing*, Vol. 12, No. 8, pp. 2958-2966, Aug. 2019 (DOI: 10.1109/JSTARS.2019.2918211).
- [17] Sourabh Paul and **Umesh C. Pati**, “A Gabor Odd Filter-Based Ratio Operator for SAR Image Matching”, *IEEE Geoscience and Remote Sensing Letters*, Vol. 16, No. 3, pp. 397-401, Oct. 2018 (DOI: 10.1109/LGRS.2018.2872979).
  - [18] Subhransu Padhee, **Umesh C. Pati**, and Kamalakanta Mahapatra, “Closed-Loop Parametric Identification of DC-DC Converter”, *Proceedings of the Institution of Mechanical Engineers, Part 1: Journal of Systems and Control Engineering*, Vol. 232, No. 10, pp. 1429-1438, Jul. 2018 (DOI: 10.1177/0959651818785291).
  - [19] Sourabh Paul and **Umesh C. Pati**, “A Block-Based Multi-Feature Extraction Scheme for SAR Image Registration”, *IEEE Geoscience and Remote Sensing Letters*, Vol. 15, No. 99, pp. 1-5, Jun. 2018 (DOI: 10.1109/LGRS.2018.2842921).
  - [20] Subhajit Kumar Indra, Subhransu Padhee, and **Umesh C. Pati**, “Design of Wireless Electronic Telltale System for Indication of Rock Deformation”, *IEEE Sensors Letters*, Vol. 2, No. 3, pp. 1-4, Jun. 2018 (DOI: 10.1109/LENS.2018.2845708).
  - [21] Subhransu Padhee, **Umesh C. Pati**, and Kamalakanta Mahapatra, “Overview of High-Step-Up DC-DC Converters for Renewable Energy Sources”, *IETE Technical Review*, Vol. 35, No. 1, pp. 99-115, Dec. 2016 (DOI: 10.1080/02564602.2016.1255571).
  - [22] Achala Pandey and **Umesh C. Pati**, “A Novel Approach to Multiscale Blending Based on Saliency Mapping for Multimedia Image Compositing Applications”, *Computers and Graphics*, Vol. 59, pp. 93-106, Oct. 2016 (DOI: 10.1016/j.cag.2016.06.003).
  - [23] Sangeeta Sahu and **Umesh C. Pati**, “Intensity Based Registration of Medical Images”, *International Journal of Computational Vision and Robotics*, Vol. 6, No. 4, pp. 319-330, Sept. 2016 (DOI: 10.1504/IJCVR.2016.079393).
  - [24] Sourabh Paul and **Umesh C. Pati**, “Remote Sensing Optical Image Registration using Modified Uniform Robust SIFT”, *IEEE Geoscience and Remote Sensing Letters*, Vol. 13, No. 9, pp. 1300-1304, Jul. 2016 (DOI: 10.1109/LGRS.2016.2582528).
  - [25] Ritika Ojha, Kranthi P. Kumar, and **Umesh C. Pati**, “Automated Solar Tracking System for PV Module”, *International Journal of Current Research*, Vol. 7, No. 10, pp. 22018-22025, Oct. 2015 (ISSN: 0975 – 833X).
  - [26] Vijay Kumar Sharma, Kamalakanta Mahapatra, and **Umesh C. Pati**, “Non-Recursive Computation of 8 X 8 2D DCT for High Accuracy and Low Area”, *Journal of Circuits, Systems and Computers*, Vol. 23, No. 10, pp. 1-21, Sept. 2014 (DOI: 10.1142/S0218126614501436).
  - [27] Ranjan Kumar Senapati, and **Umesh C. Pati**, Kamalakanta Mahapatra, “Reduced Memory, Low Complexity Embedded Image Compression Algorithm using Hierarchical Listless Discrete Tchebichef Transform”, *IET Image Processing*, Vol. 8, No. 4, pp. 213-238, Apr. 2014 (DOI: 10.1049/iet-ipr.2012.0295).

- [28] Priya Ranjan Muduli and **Umesh C. Pati**, “Image Fusion based on Bilateral Sharpness Criterion in DT-CWT Domain”, *International Journal of Computational Vision and Robotics*, Vol. 4, No. 1-2, pp. 161-170, Feb. 2014 (DOI: 10.1504/IJCVR.2014.059371).
- [29] Ranjan Kumar Senapati, **Umesh C. Pati**, and Kamalakanta Mahapatra, “An Efficient Sparse 8 X 8 Orthogonal Transform Matrix for Colour Image Compression”, *International Journal of Signal and Imaging Systems Engineering*, Vol. 6, No. 1, pp. 16-23, Jan. 2013 (DOI: 10.1504/IJSISE.2013.051502).
- [30] Ranjan Kumar Senapati, **Umesh C. Pati**, and Kamalakanta Mahapatra, “Listless Block-Tree Set Partitioning Algorithm for Very Low Bit Rate Embedded Image Compression”, *AEU – International Journal of Electronics and Communications*, Vol. 66, No. 12, pp. 985-995, Dec. 2012 (DOI: 10.1016/j.aeue.2012.05.001).
- [31] Vijay Kumar Sharma, **Umesh C. Pati**, and Kamalakanta Mahapatra, “A Simple VLSI Architecture for Computation of 2D DCT Quantisation and Zig-Zag Ordering for JPEG”, *International Journal of Signal and Imaging Systems Engineering*, Vol. 5, No. 1, pp. 58-65, May 2012 (DOI: 10.1504/IJSISE.2012.046743).
- [32] Ranjan K Senapati, **Umesh C. Pati**, and Kamalakanta Mahapatra, “A Fast Zigzag-Pruned 4x4 DTT Algorithm for Image Compression”, *WSEAS Transactions on Signal Processing*, Vol. 7, No. 1, pp. 34-43, Jan. 2011.
- [33] **Umesh C. Pati**, Pranab K. Dutta, and Alok Barua, “Feature Detection of an Object by Image Fusion”, *International Journal of Computer Applications*, Vol. 1, No. 17, pp. 59-67, Feb. 2010 (DOI: 10.5120/362-549).
- [34] **Umesh C. Pati**, Pranab K Dutta, and Alok Barua, “Feature Level Fusion of Range and Intensity Images of an Object”, *International Journal of Computational Vision and Robotics*, Vol. 1, No. 1, pp. 2-33, Jun. 2009 (DOI: /IJCVR10.1504.2009.026826).

#### ***D. National Journals***

- [1] Debojyoti Mondal, Tarun K. Dan, and **Umesh C. Pati**, “Harvesting Energy using Piezoelectric Materials”, *Journal of the Instrument Society of India*, Vol. 47, No. 3, pp. 91-95, Sept. 2017.
- [2] Rajesh K. Jha and **Umesh C. Pati**, “Zigbee and GSM based Wireless Data Acquisition for Agriculture”, *Journal of the Instrument Society of India*, Vol. 46, No. 3, pp. 117-121, Sept. 2016.
- [3] **Umesh C. Pati**, Pragyan P. Kar, and Priyam Saikia, “Design and Implementation of Fuzzy Logic Controller in PID Using LabVIEW”, *Journal of the Instrument Society of India*, Vol. 45, No. 4, pp. 204-207, Dec. 2015.
- [4] Nisha Kashyap and **Umesh C. Pati**, “Hardware Implementation of Low Cost Multi-Channel PC Based Data Acquisition System”, *Journal of the Instrument Society of India*, Vol. 45, No. 3, pp. 145-148, Sept. 2015.
- [5] Jyoti R. Pati and **Umesh C. Pati**, “Modelling and Control of Linear Cart Pendulum System”, *Journal of the Instrument Society of India*, Vol. 45, No. 1, pp. 24-28, Mar. 2015.

- [6] Nilimamayee Samal and **Umesh C. Pati**, “PC based Data Acquisition Platform for Green House”, *Journal of the Instrument Society of India*, Vol. 44, No. 2, pp. 118-121, Jun. 2014.
- [7] Pragyan P. Kar, Priyam Saikia, and **Umesh C. Pati**, “Performance of Different Control Strategies for Boiler Drum Level Control using LabVIEW”, *Journal of the Instrument Society of India*, Vol. 44, No. 1, pp. 55-58, Mar. 2014.
- [8] Abyarthana Bisoyi and **Umesh C. Pati**, “Online Written Communication using Internet Protocol based on Virtual Instrumentation”, *Journal of the Instrument Society of India*, Vol. 43, No. 3, pp. 175-178, Sept. 2013.
- [9] Anuran Maiti and **Umesh C. Pati**, “Analysis and Control of First and Second-Order Level Process using LabVIEW”, *Journal of the Instrument Society of India*, Vol. 43, No. 3, pp. 171-174, Sept. 2013.
- [10] Roopal Agrawal and **Umesh C. Pati**, “Internet based Data Logging and Supervisory Control of Boiler Drum Level using LabVIEW”, *Journal of the Instrument Society of India*, Vol. 42, No. 3, pp. 189-192, Sept. 2012.
- [11] Rashmi Panda and **Umesh C. Pati**, “Performance Analysis of LMS based Adaptive Filter Algorithms for ECG Denoising”, *Journal of the Instrument Society of India*, Vol. 42, No. 2, pp. 142-145, Jun. 2012.
- [12] Sankata B. Prusty and **Umesh C. Pati**, “Analysis of Higher-Order Thermal Process using LabVIEW”, *Journal of the Instrument Society of India*, Vol. 42, No. 2, pp. 112-114, Jun. 2012.
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