RESEARCH WORK DETAILS of Prof. G PANDA

at

C V Raman Global University

(Updated 7th June 2024)

Prof. GANAPATI PANDA FNAE, FNASc FIET, FIE, FIETE Professor and Research Advisor C V Raman Global University	**Google Scholar**
	Citations – 13967
	h-index - 56
	i10-index - 216

Year	**Journals**	**International Conferences**	**Book Chapters**	**PATENT**	**PhD Guidance**		**Research Projects**
					Completed	**Continuing**	
2018	8						
2019	4	3					
2020	10	4					
2021	21	6		5			
2022	21	5	3	1	1		1
2023	17	9			2	11	1
2024	9		2	1	2		4
Total	**90**	**27**	**5**	**7**			**6**
Total Publications = 129							

A. Published/Accepted

Sl No	**Journal Name**	**Title**	**Impact Factor**	**Publication Year**
1	***IET Digital Library*** *Healthcare technology letters*	Panda, R., Puhan, N. B., & Panda, G. (2018). Mean curvature and texture constrained composite weighted random walk algorithm for optic disc segmentation towards glaucoma screening. *Healthcare technology letters*, *5*(1), 31-37.	**1.345**	**2018**
2	***Springer*** *Circuits, Systems, and Signal Processing*	Vasundhara, Mohanty, B. K., Panda, G., & Puhan, N. B. (2018). Hardware design for VLSI implementation of acoustic feedback canceller in hearing aids. *Circuits, Systems, and Signal Processing*, *37*(4), 1383-1406.	**2.311**	
3	***Springer*** *Pattern Analysis and Applications*	Dash, Kalyan S., Niladri B. Puhan, and Ganapati Panda. "Unconstrained handwritten digit recognition using perceptual shape primitives." *Pattern Analysis and Applications* 21 (2018): 413-436.	**2.307**	
4	***Springer*** *Signal, Image and Video Processing*	Vasundhara, Panda, G., & Puhan, N. B. (2018). A new evolving-update-based feedback cancellation scheme for hearing aids. *Signal, Image and Video Processing*, *12*, 731-738.	**1.583**	

5	***Pergamon*** *Computerized Medical Imaging and Graphics*	Panda, R., Puhan, N. B., Rao, A., Padhy, D., & Panda, G. (2018). Automated retinal nerve fiber layer defect detection using fundus imaging in glaucoma. *Computerized Medical Imaging and Graphics*, *66*, 56-65.	**7.422**	
6	***IET*** *IET Signal Processing*	Kukde, R., Panda, G., & Manikandan, M. S. (2018). On distributed non-linear active noise control using diffusion collaborative learning strategy. *IET Signal Processing*, *12*(4), 410-421.	**1.819**	
7	***Springer Berlin Heidelberg*** *Arabian Journal for Science and Engineering*	Chakravarthy, V. V. S. S. S., Chowdary, P. S. R., Panda, G., Anguera, J., Andújar, A., & Majhi, B. (2018). On the linear antenna array synthesis techniques for sum and difference patterns using flower pollination algorithm. *Arabian Journal for Science and Engineering*, *43*(8), 3965-3977.	**2.807**	
8	***Society of Photo-Optical Instrumentation Engineers*** *Journal of Medical Imaging*	Panda, R., Puhan, N. B., Rao, A., Mandal, B., Padhy, D., & Panda, G. (2018). Deep convolutional neural network-based patch classification for retinal nerve fiber layer defect detection in early glaucoma. *Journal of Medical Imaging*, *5*(4), 044003-044003.	**0.878**	
9	***Elsevier*** *Mechanical Systems and Signal Processing*	Rout, N. K., Das, D. P., & Panda, G. (2019). PSO based adaptive narrowband ANC algorithm without the use of synchronization signal and secondary path estimate. *Mechanical Systems and Signal Processing*, *114*, 378-398.	**8.934**	**2019**
10	***Springer*** *Signal, Image and Video Processing*	Kukde, R., Manikandan, M. S., & Panda, G. (2019). Reduced complexity diffusion filtered x least mean square algorithm for distributed active noise cancellation. *Signal, Image and Video Processing*, *13*(3), 447-455.	**1.583**	
11	***Elsevier*** *Digital Communications and Networks*	Pradhan, P. M., & Panda, G. (2019). S-transformation based integrated approach for spectrum estimation, storage, and sensing in cognitive radio. *Digital Communications and Networks*, *5*(3), 160-169.	**6.348**	
12	***Elsevier*** *Applied Acoustics*	Puhan, N. B., & Panda, G. (2019). Zero attracting proportionate normalized subband adaptive filtering technique for feedback cancellation in hearing aids. *Applied Acoustics*, *149*, 39-45.	**3.614**	
13	***Springer*** - *Electronic Commerce Research*	Lamba, D., Yadav, D. K., Barve, A., & Panda, G. (2020). Prioritizing barriers in reverse logistics of E-commerce supply chain using fuzzy-analytic hierarchy process. *Electronic Commerce Research*, *20*, 381-403.	**4.3**	**2020**
14	***Springer*** *Neural Processing Letters*	Panda, S., & Panda, G. (2020). Performance evaluation of a new BP algorithm for a modified artificial neural network. *Neural Processing Letters*, *51*(2), 1869-1889.	**2.565**	
15	***Springer*** *Analog Integrated Circuits and Signal Processing*	Dash, T. K., Solanki, S. S., & Panda, G. (2020). Improved phase aware speech enhancement using bio-inspired and ANN techniques. *Analog Integrated Circuits and Signal Processing*, *102*, 465-477.	**1.321**	

16	***IEEE*** *Open Journal of Signal Processing*	Kukde, R., Manikandan, M. S., & Panda, G. (2020). Incremental learning based adaptive filter for nonlinear distributed active noise control system. *IEEE Open Journal of Signal Processing*, *1*, 1-13.	**2.89**	
17	***IEEE*** *Journal of Selected Topics in Applied Earth Observations and Remote Sensing*	Kothari, N. S., Meher, S. K., & Panda, G. (2020). Improved spatial information based semi supervised classification of remote sensing images. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, *13*, 329-340.	**4.715**	
18	***Wiley Online Library*** *Cognitive Computation and Systems*	Kukde, R., Panda, G., & Manikandan, M. S. (2020). Bio-inspired evolutionary computing approach for distributed active noise control problem. *Cognitive Computation and Systems*, *2*(2), 57-65.	**4.89**	
20	***Wiley*** *Expert Systems*	Panda, S., & Panda, G. (2020). Fast and improved backpropagation learning of multi-layer artificial neural network using adaptive activation function. *Expert Systems*, *37*(5), e12555.	**2.812**	
21	***CSIR*** *Journal of Scientific & Industrial Research*	Sagar, P., Upadhyaya, A., Mishra, S. K., Pandey, R. N., Sahu, S. S., & Panda, G. (2020). A circular adaptive median filter for salt and pepper noise suppression from MRI images.	**0.555**	
22	***CSIR*** *Journal of Scientific & Industrial Research*	Parida, N., Mishra, D., Das, K., Rout, N. K., & Panda, G. (2020). A Hybridized Forecasting Model for Metal Commodity Prices: An Empirical Model Evaluation. *Journal of Scientific & Industrial Research*, *79*(10), 945-950.	**0.555**	
23	***Bentham Science Publishers*** *International Journal of Sensors Wireless Communications and Control*	Satapathy, A., Panda, G., Gogula, R., & Sharma, R. (2020). Low Complexity Adaptive Nonlinear Models for the Diagnosis of Periodontal Disease. *International Journal of Sensors Wireless Communications and Control*, *10*(4), 508-521.	**0.158**	
24	***Springer*** *SN Computer Science*	Panda, R., Puhan, N. B., Mandal, B., & Panda, G. (2021). Glauconet: patch-based residual deep learning network for optic disc and cup segmentation towards glaucoma assessment. *SN Computer Science*, *2*, 1-17.	**3.78**	**2021**
25	***Springer*** *Evolutionary Intelligence*	Parida, N., Mishra, D., Das, K., Rout, N. K., & Panda, G. (2021). On deep ensemble CNN–SAE based novel agro-market price forecasting. *Evolutionary Intelligence*, *14*, 851-862.	**0.541**	
26	***Springer*** *Multimedia Tools and Applications*	Dash, P. P., Mishra, S. K., Senapati, K. K., & Panda, G. (2021). Interactive teaching learning based optimization technique for multiple object tracking. *Multimedia Tools and Applications*, *80*, 10577-10600.	**2.577**	
27	***Springer***	Dash, T. K., Solanki, S. S., Panda, G., & Satapathy, S. C. (2021). Development of	**0.541**	

	Evolutionary Intelligence	statistical estimators for speech enhancement using multi-objective grey wolf optimizer. *Evolutionary Intelligence*, *14*, 767-778.		
28	***IEEE/ACM Transactions*** *Transaction on Computational Biology and Bioinformatics*	Mahapatra, S., Gupta, V. R., Sahu, S. S., & Panda, G. (2021). Deep neural network and extreme gradient boosting based Hybrid classifier for improved prediction of Protein-Protein interaction. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, *19*(1), 155-165.	**3.71**	
29	***Wiley*** - *International Journal of Communication Systems*	Datta, A., Bhatia, V., Mandloi, M., & Panda, G. (2021). Graph traversal aided detection in uplink MBM massive MIMO based on socio-cognitive knowledge of swarm optimization. *International Journal of Communication Systems*, *34*(5), e4720.	**1.882**	
30	***Springer*** *Arabian Journal for Science and Engineering*	Sahoo, A. K., Mishra, S. K., Majhi, B., Panda, G., & Satapathy, S. C. (2021). Real-time identification of fuzzy PID-controlled maglev system using TLBO-based functional link artificial neural network. *Arabian Journal for Science and Engineering*, *46*, 4103-4118.	**2.807**	
31	***Elsevier*** *Pattern Recognition*	Dash, T. K., Mishra, S., Panda, G., & Satapathy, S. C. (2021). Detection of COVID-19 from speech signal using bio-inspired based cepstral features. *Pattern Recognition*, *117*, 107999.	**8.518**	
32	***Elsevier*** - *Biomedical Signal Processing and Control*	Rath, A., Mishra, D., Panda, G., & Satapathy, S. C. (2021). Heart disease detection using deep learning methods from imbalanced ECG samples. *Biomedical Signal Processing and Control*, *68*, 102820.	**5.076**	
33	***IEEE*** *IEEE Transactions on Systems, Man and Cybernetics: Systems*	Panda, S., & Panda, G. (2021). On the development and performance evaluation of improved radial basis function neural networks. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, *52*(6), 3873-3884.	**13.451**	
34	***Springer*** *Circuits, Systems, and Signal Processing*	Dash, T. K., Solanki, S. S., & Panda, G. (2021). Multi-objective approach to speech enhancement using tunable Q-factor-based wavelet transform and ANN techniques. *Circuits, Systems, and Signal Processing*, *40*(12), 6067-6097.	**2.311**	
35	***Springer*** *Arabian Journal for Science and Engineering*	Sahoo, A. K., Mishra, S. K., Majhi, B., Panda, G., & Satapathy, S. C. (2021). Real-time identification of fuzzy PID-controlled maglev system using TLBO-based functional link artificial neural network. *Arabian Journal for Science and Engineering*, *46*, 4103-4118.	**2.807**	
36	***Wiley*** *International Journal of Communication Systems*	Datta, A., Bhatia, V., Mandloi, M., & Panda, G. (2021). Graph traversal aided detection in uplink MBM massive MIMO based on socio-cognitive knowledge of swarm optimization. *International Journal of Communication Systems*, *34*(5), e4720.	**1.882**	

37	***Springer*** *Multimedia Tools and Applications*	Dash, P. P., Mishra, S. K., Senapati, K. K., & Panda, G. (2021). Interactive teaching learning-based optimization technique for multiple object tracking. *Multimedia Tools and Applications*, *80*, 10577-10600.	**2.577**	
38	***IEEE/ACM*** *Transactions on computational biology and bioinformatics*	Mahapatra, S., Gupta, V. R., Sahu, S. S., & Panda, G. (2021). Deep neural network and extreme gradient boosting based Hybrid classifier for improved prediction of Protein-Protein interaction. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, *19*(1), 155-165.	**3.71**	
39	***Springer*** *The European Physical Journal Special Topics*	Meher, S. K., & Panda, G. (2021). Deep learning in astronomy: a tutorial perspective. *The European Physical Journal Special Topics*, *230*, 2285-2317.	**2.707**	
40	***Taylor & Francis*** *Electromagnetics*	Dutta, K. P., Mahanti, G. K., & Panda, G. (2021). Effective minimization of side lobe level of sparse thinned planar array antenna in multiple planes with constraints. *Electromagnetics*, *41*(5), 303-314.	**1.042**	
41	***CSIR*** *Journal of Scientific & Industrial Research*	Acharya, D. S., Mishra, S. K., & Panda, G. (2021). A Comparative Performance Assessment of Evolutionary Fractional Order PID Controllers for Magnetic Levitation Plant with Time Delay. *Journal of Scientific & Industrial Research*, *80*(04), 322-327.	**0.555**	
42	***IOS Press-*** *Journal of Intelligent & Fuzzy Systems*	Rath, A., Patnaik, S., & Panda, G. (2021). Comprehensive review of computational intelligence based smart city community. *Journal of Intelligent & Fuzzy Systems*, *41*(1), 975-991.	**1.737**	
43	***Multidisciplinary Digital Publishing Institute-*** *Mathematics*	Pradhan, A., Mishra, D., Das, K., Panda, G., Kumar, S., & Zymbler, M. (2021). On the classification of MR images using "ELM-SSA" coated hybrid model. *Mathematics*, *9*(17), 2095.	**2.592**	
44	***Springer Berlin Heidelberg-*** *Evolutionary Intelligence*	Parida, N., Mishra, D., Das, K., Rout, N. K., & Panda, G. (2021). On deep ensemble CNN–SAE based novel agro-market price forecasting. *Evolutionary Intelligence*, *14*, 851-862.	**0.541**	

45	***IEEE Transactions*** *IEEE Transactions on Industrial Informatics*	Dash, S. P., Joshi, S., Satapathy, S. C., Shandilya, S. K., & Panda, G. (2022). A cybertwin-based 6G cooperative IoE communication network: Secrecy outage analysis. *IEEE Transactions on Industrial Informatics*, *18*(7), 4922-4932.	**11.648**	**2022**
46	***CSIR*** *Journal of Scientific & Industrial Research*	Das, S., Sahu, B., & Panda, G. (2022). Network Lifetime and Coverage Fraction Analysis for Wireless Sensor Networks. *Journal of Scientific & Industrial Research*, *79*(4), 285-291.	**0.555**	
47	***CSIR*** *Journal of Scientific & Industrial Research*	Panda, S., & Panda, G. (2022). Computation of Time-dependent Probabilities of Vesicle Release and Binding of Neurotransmitters of Postsynaptic Neuron. *Journal of Scientific & Industrial Research*, *79*(4), 302-305.	**0.555**	
48	***Wiley Online Library-*** *International Journal of Communication Systems*	Misra, B., Mahanti, G. K., & Panda, G. (2022). Reduction of side lobes in the entire azimuth plane in a planar elliptical array antenna. *International Journal of Communication Systems*, *35*(6), e5067.	**1.882**	
49	***Springer-*** *Multimedia Tools and Applications*	Rath, A., Mishra, D., Panda, G., & Satapathy, S. C. (2022). An exhaustive review of machine and deep learning-based diagnosis of heart diseases. *Multimedia Tools and Applications*, *81*(25), 36069-36127.	**2.577**	
50	***Inder Science*** *International Journal of Computational Vision and Robotics*	Martha, S. R., Panda, G., & Patri, M. (2022). Energy-based virtual screening of drugs documented for schizophrenia against DRD2 and HTR2A. *International Journal of Computational Vision and Robotics*, *12*(1), 53-65.	**0.163**	
51	***Elsevier-*** *Biomedical Signal Processing and Control*	Rath, A., Mishra, D., Panda, G., & Pal, M. (2022). Development and assessment of machine learning based heart disease detection using imbalanced heart sound signal. *Biomedical Signal Processing and Control*, *76*, 103730.	**5.076**	
52	***Elsevier-*** *Sustainable Computing: Informatics and Systems*	Rath, A., Mishra, D., Panda, G., Satapathy, S. C., & Xia, K. (2022). Improved heart disease detection from ECG signal using deep learning-based ensemble model. *Sustainable Computing: Informatics and Systems*, *35*, 100732.	**4.923**	
53	***IEEE*** *IEEE Sensors Letters*	Pachori, R. B. (2022). Automated Detection of Pulmonary Diseases from Lung Sound Signals using Fixed Boundary based Empirical Wavelet Transform.	**0.694**	
54	***Wiley*** *International Journal of*	Misra, B., Mahanti, G. K., & Panda, G. (2022). Reduction of side lobes in the entire azimuth plane in a planar elliptical array antenna.	**1.882**	

	Communication Systems	*International Journal of Communication Systems*, *35*(6), e5067.		
55	***IEEE*** *Journal of Biomedical and Health Informatics*	Dash, T. K., Chakraborty, C., Mahapatra, S., & Panda, G. (2022). Gradient boosting machine and efficient combination of features for speech-based detection of COVID-19. *IEEE Journal of Biomedical and Health Informatics*, *26*(11), 5364-5371.	**7.021**	
56	***ACM Transaction*** *Asian and Low-Resource Language Information Processing*	Chakraborty, C., Dash*, T. K., Panda, G., & Solanki, S. S. (2022). Phase-based Cepstral features for Automatic Speech Emotion Recognition of Low Resource Indian languages. *Transactions on Asian and Low-Resource Language Information Processing*.	**1.471**	
57	***IEEE*** *IEEE Sensors Letters*	Dash, S., Tripathy, R. K., Panda, G., & Pachori, R. B. (2022). Automated recognition of imagined commands from EEG signals using multivariate fast and adaptive empirical mode decomposition-based method. *IEEE Sensors Letters*, *6*(2), 1-4.	**0.694**	
58	***DE GRUYTER*** *Open Medicine*	Pal, M., Parija, S., Panda, G., Dhama, K., & Mohapatra, R. K. (2022). Risk prediction of cardiovascular disease using machine learning classifiers. *Open Medicine*, *17*(1), 1100-1113.	**0.214**	
59	***IEEE*** *Transactions on Instrumentation and Measurement*	Ghosh, S. K., Ponnalagu, R. N., Tripathy, R. K., Panda, G., & Pachori, R. B. (2022). Automated heart sound activity detection from PCG signal using time–frequency-domain deep neural network. *IEEE Transactions on Instrumentation and Measurement*, *71*, 1-10.	**5.332**	
60	***IEEE*** *IEEE Sensors Letters*	Tripathy, R. K., Dash, S., Rath, A., Panda, G., & Pachori, R. B. (2022). Automated detection of pulmonary diseases from lung sound signals using fixed-boundary-based empirical wavelet transform. *IEEE Sensors Letters*, *6*(5), 1-4.	**0.694**	
61	***IEEE*** *Transactions on Computational Social Systems*	Dash, T. K., Chakraborty, C., Mahapatra, S., & Panda, G. (2022). Mitigating information interruptions by COVID-19 face masks: a three-stage speech enhancement scheme. *IEEE Transactions on Computational Social Systems*.	**4.747**	
62	***IEEE*** *IEEE Sensors Letters*	Dash, S., Tripathy, R. K., Dash, D. K., Panda, G., & Pachori, R. B. (2022). Multiscale domain gradient boosting models for the automated recognition of imagined vowels using multichannel EEG signals. *IEEE Sensors Letters*, *6*(11), 1-4.	**0.694**	
63	***Frontiers Media SA*** *Frontiers in Big Data*	Rath, A., Mishra, D., & Panda, G. (2022). Imbalanced ECG signal-based heart disease classification using ensemble machine learning technique. *Frontiers in Big Data*, *5*, 1021518.	**SCOPUS**	
64	***CSIR*** *Journal of Scientific & Industrial Research*	Panda, S., & Panda, G. (2022). Computation of Time-dependent Probabilities of Vesicle Release and Binding of Neurotransmitters of Postsynaptic Neuron. *Journal of Scientific & Industrial Research*, *79*(4), 302-305.	**0.555**	

65	***Springer*** *Soft Computing*	Ghanem, S., Kanungo, P., Panda, G., & Parwekar, P. (2023). An improved and low-complexity neural network model for curved lane detection of autonomous driving system. *Soft Computing*, *27*(1), 493-504.	**3.732**	**2023**
66	***Springer*** *Complex and Intelligent Systems*	Ghanem, S., Kanungo, P., Panda, G., Satapathy, S. C., & Sharma, R. (2023). Lane detection under artificial colored light in tunnels and on highways: an IoT-based framework for smart city infrastructure. *Complex & Intelligent Systems*, *9*(4), 3601-3612.	**7.46**	
67	***Springer*** *Soft Computing*	Meher, S. K., Kothari, N. S., Sindal, R., & Panda, G. (2023). Domain adaptation framework with ensemble of fuzzy rules-based ELMs for remote-sensing image classification. *Soft Computing*, 1-13.	**3.732**	
68	***Nature*** *Scientific reports*	Sharma, R., Mahanti, G. K., Panda, G., Rath, A., Dash, S., Mallik, S., & Zhao, Z. (2023). Comparative performance analysis of binary variants of FOX optimization algorithm with half-quadratic ensemble ranking method for thyroid cancer detection. *Scientific Reports*, *13*(1), 19598.	**0.19**	
69	***Europe PMC***	Dash, S., Sahu, P. C., Prasad, B., Dash, R., Muduli, D., Rath, A., ... & Shah, M. A. (2023). An Empirical Analysis of ELM based CNN Models for Automatic Modulation Classification in Wireless Communication.	**2.478**	
70	***ISTP*** *Journal of Artificial Intelligence and Technology*	Brahma, B., Dash, T. K., Panda, G., Prasad, L. N., & Kulkarni, R. (2023). Design of P-FLANN Model for Intelligent Water Fountain Sound Pleasantness Monitoring Using Bio-inspired Computing and Human Speech Perception. *Journal of Artificial Intelligence and Technology*, *3*(4), 187-194.	**3.635**	
71	***Elsevier*** *Healthcare Analytics*	Brahma, B., Dash, T. K., Panda, G., Prasad, L. N., & Kulkarni, R. (2023). Integrated swarm intelligence and IoT for early and accurate remote voice-based pathology detection and water sound quality estimation. *Healthcare Analytics*, *3*, 100200.	**1.91**	
72	***IEEE*** *IEEE Sensors Letters*	Kabi, S. K., Tripathy, R. K., Patra, D., & Panda, G. (2023). A Novel Approach for the Detection of Tuberculosis and Pneumonia Using Chest X-Ray Images for Smart Healthcare Applications. *IEEE Sensors Letters*, *7*(12), 1-4.	**0.694**	
73	***Research Square***	Brahma, D., Swayamsiddha, S., & Panda, G. (2023). Development and Performance Evaluation of Multi-Objective Approach-Based Spectrum Allocation in Cognitive Radio Network.	**SCOPUS**	
74	***MDPI*** *Journal of Imaging*	Sharma, R., Mahanti, G. K., Panda, G., Rath, A., Dash, S., Mallik, S., & Hu, R. (2023). A framework for detecting thyroid cancer from ultrasound and histopathological images using	**0.728**	

		deep learning, meta-heuristics, and MCDM algorithms. *Journal of Imaging*, *9*(9), 173.		
75	***IEEE*** *TechRxiv*	Lenka, S., Mayaluri, Z. L., Panda, G., & Nayak, S. R. (2023). Glaucoma Detection from Retinal Fundus Images using Graph Convolution Based Multi-task Model.		
76	***Hindawi*** *Journal of Pure & Applied Microbiology*	Pal, M., Parija, S., Panda, G., Mishra, S., Mohapatra, R. K., & Dhama, K. (2023). COVID-19 Prognosis from Chest X-ray Images by using Deep Learning Approaches: A Next Generation Diagnostic Tool. *Journal of Pure & Applied Microbiology*, *17*(2).	**0.8**	
77	***Europepmc*** *Current Medical Imaging*.	Sharma, R., Panda, G., & Singh, A. (2023). Thyroid Nodules Classification using Weighted Average Ensemble and D-CRITIC based TOPSIS Methods for Ultrasound Images. *Current Medical Imaging*.	**1.315**	
78	***Onkologia i Radioterapia***	Pal, M., Parija, S., & Panda, G. (2023). Prediction of breast cancer using tools of machine learning techniques. *Onkologia i Radioterapia*, *17*(4).	**0.118**	
79	***Frontiers*** *Frontiers in Artificial Intelligence*	Mishra, S., Dash, T. K., & Panda, G. (2023). Speech phoneme and spectral smearing based non-invasive COVID-19 detection. *Frontiers in Artificial Intelligence*, *5*, 1035805.	**SCOPUS**	
80	***researchsquare***	Salman, I., Panda, G., & Vomlel, J. (2023). Development and Performance Evaluation of a Novel Bayesian Network Model for the Classification of Heart Disease.		
81	*ACM Transactions on Internet Technology*	Sharma, Rohit, Gautam Kumar Mahanti, Chinmay Chakraborty, Ganapati Panda, and Adyasha Rath. "An IoT and Deep Learning-Based Smart Healthcare Framework for Thyroid Cancer Detection." *ACM Transactions on Internet Technology* (2023).	**5.15**	
82	***Elsevier*** *e-Prime-Advances in Electrical Engineering, Electronics and Energy*	Pal, M., Parija, S., & Panda, G. (2024). An effective ensemble approach for classification of chest X-ray images having symptoms of COVID: A precautionary measure for the COVID-19 subvariants. *e-Prime-Advances in Electrical Engineering, Electronics and Energy*, *8*, 100547.	**1.5**	**2024**
83	***researchsquare***	Das, P., Nanda, S., Panda, G., Dash, S., Mallik, S., Ksibi, A., ... & Bouchelligua, W. (2024). A Robust Parkinson's Disease Detection Model Based on Time-varying Synaptic Efficacy Function in Spiking Neural Network.		
84	***researchsquare***	Mallik, S., Pradhan, D., Muduli, D., Rath, A., Panda, G., Dash, S., & Qin, H. (2024). A Novel Approach to Enhance Software Defect Prediction using An Improved Grey Wolf Optimization based Extreme Learning Machine Technique.		
85	*IEEE* *IEEE Access*	Sahoo, P. K., Panda, M. K., Panigrahi, U., Panda, G., Jain, P., Islam, M. S., & Islam, M. T. (2024). An Improved VGG-19 Network Induced Enhanced Feature Pooling for Precise Moving	**4.82**	

		Object Detection In Complex Video Scenes. *IEEE Access*.		
86	*Springer Soft Computing*	Meher, S. K., Kothari, N. S., Sindal, R., & Panda, G. (2024). Domain adaptation framework with ensemble of fuzzy rules-based ELMs for remote-sensing image classification. *Soft Computing*, *28*(6), 5577-5589.	**4.1**	
87	*Journal of Artificial Intelligence and Technology*	Pradhan, J. D., Prasad, L. N., Dash, T. K., Guduri, M., & Panda, G. (2024). Cascaded PFLANN Model for Intelligent Health Informatics in Detection of Respiratory Diseases from Speech Using Bio-inspired Computation. *Journal of Artificial Intelligence and Technology*.	**SCOPUS**	
88	*Elsevier Biomedical Signal Processing and Control*	Gupta, P., Nandakumar, S., Gupta, M., & Panda, G. (2024). Data programming enabled weak supervised labeling for ECG time series. *Biomedical Signal Processing and Control*, *87*, 105540.	**5.1**	
89	*Elsevier* *Image and Vision Computing*	Panigrahi, U., Sahoo, P. K., Panda, M. K., & Panda, G. (2024). A ResNet-101 deep learning framework induced transfer learning strategy for moving object detection. *Image and Vision Computing*, *146*, 105021.	**5.21**	
90	*Springer* *Mobile Networks and Applications*	C. Ray, S. Bakshi, P.K. Sa, and G. Panda, "A resource-efficient deep learning approach to visual-based cattle geographic origin prediction," Mobile Networks and Applications, 2024, DOI: 10.1007/s11036-024-02350-8.	**4.16**	

B. PATENT

1. Tusar Kanti Dash, PK Sahoo, Ganapati Panda, AUSTRALIAN INNOVATION PATENT (Application number - 2021101586), "A System and a Method for Non-Intrusive Speech Quality and Intelligibility Evaluation Measures using FLANN Model" GRANTED on 5th May 2021. http://pericles.ipaustralia.gov.au/ols/auspat/applicationDetails.do?applicationNo=2021101586
2. Tusar Kanti Dash, PK Sahoo, Ganapati Panda, INDIAN PATENT (Application number - 202131043611), "System and Method for recovering the clean speech from communication affected by the use of COVID-19 face masks by applying phase modification" PUBLISHED on 22 October 2021 https://ipindiaservices.gov.in/publicsearch
3. Tusar Kanti Dash, PK Sahoo, Ganapati Panda, SOUTH AFRICAN PATENT (2021/07927), "Speech Intelligibility Enhancement System for Persons using COVID-19 protective face masks" FILED on 18 October 2021 https://iponline.cipc.co.za/Account/Login.aspx?pb=aVMvEDtYJoBv4STTqmvCTpb7MWDx2eY0ESHMO1dLY8+DkrV5ADDUPw
4. Tusar Kanti Dash, PK Sahoo, P Kanungo, Ganapati Panda, INDIAN PATENT (Application number - 202131058232), "Method and System for Classifying Voice Input" PUBLISHED on 31 December 2021 https://ipindiaservices.gov.in/publicsearch
5. PK Sahoo, P Kanungo, Tusar Kanti Dash, Ganapati Panda, INDIAN PATENT (Application number - 202131055037), "Internet of Things (IoT) based Healthcare System" PUBLISHED on 10 December 2021 https://ipindiaservices.gov.in/publicsearch

6. Narendra Kumar Rout; Nirjharinee Parida; Sarthak Panda; Adyasha Rath; Harish Kumar Sahoo; Ganapati Panda, SOUTH AFRICAN PATENT (Application number 202204044), "Analytic Hierarchy Process Based Image Processing System" PUBLISHED on 29th June 2022.

7. Ram Chandra Barik, Debendra Muduli, Ganapati Panda, Rasmikanta Pati, Saroj Pradhan, Manohar Mishra, INDIAN DESIGN PATENT (Application number 418169-001), "IoT based Smart Mirror for Hirsutism Detection" PUBLISHED on 27th May 2024.

C. International Conferences

Sl No	Conf Name	Title	**Publication Year**
1	***IEEE-ICORT 2019 (Chandipur)***	S Ghanem, G Panda, P Kanungo, "Development of Cognitive Driver Assistance System", *IEEE International Conference on Range Technology, Integrated Test Range*, Feb 15-17,2019	**2019**
2	***IEEE-ICORT 2019 (Chandipur)***	Mohanty, M., Kannadasan, P., Sarkar, B. K., & Panda, G. (2019, February). Cumulant based Blind Channel Estimation and Equalization in Aeronautical Telemetry Channel. In *2019 International Conference on Range Technology (ICORT)* (pp. 1-4). IEEE.	
3	***IEEE-ICORT 2019 (Chandipur)***	S Panda, P K Dash, B Das, N Puhan, G Panda, "Development and Performance Evaluation of Realtime IR and CCD Image Fusion under Noisy Environment" IEEE International Conference on Range Technology, Integrated Test Range, DRDO, Chandipur, Odisha, Feb 15-17,2019	
4	***IEEE-ICCAR 2020 (Singapore)***	Panda, S., & Panda, G. (2020, April). Intelligent classification of IoT traffic in healthcare using machine learning techniques. In *2020 6th International Conference on Control, Automation and Robotics (ICCAR)* (pp. 581-585). IEEE.	**2020**
5	***ICBDAI 2020 Kuala Lumpur, Malaysia***	Performance Evaluation of Different Anns Based Generation of Postsynaptic Potential of Biological Neuron, ICBDAI 2020: International Conference on Big Data and Artificial Intelligence" Feb 10-11, 2020 in Kuala Lumpur, Malaysia.	
6	***IEEE-iSSSC2020***	Das, P., Nanda, S., & Panda, G. (2020, December). Automated improved detection of Parkinson's disease using ensemble modeling. In *2020 IEEE International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC)* (pp. 1-5). IEEE.	
7	***IEEE-ICORT 2021***	S Mishra, G Panda "Review on COVID-19"	
8	***IEEE-ICORT 2021***	Pal, M., Parija, S., & Panda, G. (2021, August). Improved prediction of diabetes mellitus using machine learning based approach. In *2021 2nd International Conference on Range Technology (ICORT)* (pp. 1-6). IEEE.	**2021**
9	***Springer ICCISC 2020***	Rath, A., Mishra, D., & Panda, G. (2021). LSTM-based cardiovascular disease detection using ECG signal. In *Cognitive Informatics and Soft Computing: Proceeding of CISC 2020* (pp. 133-142). Springer Singapore.	
10	***Springer ICCISC 2020***	Sarangi, P., Priyadarshan, P., Mishra, S., Rath, A., & Panda, G. (2021). Early Detection of Pneumonia from Chest X-Ray Images Using Deep Learning Approach. In *Smart Computing Techniques and Applications: Proceedings of the Fourth International*	

		Conference on Smart Computing and Informatics, Volume 2 (pp. 595-604). Springer Singapore.	
11	***IEEE-ICCDSE-2020***	Priyadarshan, P., Sarangi, P., Rath, A., & Panda, G. (2021, January). Machine Learning based improved malware detection schemes. In *2021 11th International Conference on Cloud Computing, Data Science & Engineering (Confluence)* (pp. 925-931). IEEE.	
12	***2021 IEEE (AESPC)***	Rath, A., Sarangi, P., Rath, A., & Panda, G. (2021, November). Development and Performance Assessment of Bio-inspired based ANN Model for Handwritten English Numeral Recognition. In *2021 IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)* (pp. 1-5). IEEE.	
13	***2021 IEEE International Conference on Confluence the Next Generation Information Technology Summit***	Priyadarshan, P., Sarangi, P., Rath, A., & Panda, G. (2021, January). Machine Learning based improved malware detection schemes. In *2021 11th International Conference on Cloud Computing, Data Science & Engineering (Confluence)* (pp. 925-931). IEEE.	
14	***IEEE Indiscon 2022***	Dash, S., Ghosh, S. K., Tripathy, R. K., Panda, G., & Pachori, R. B. (2022, July). Fourier-Bessel domain based discrete Stockwell transform for the analysis of non-stationary signals. In *2022 IEEE India Council International Subsections Conference (INDISCON)* (pp. 1-6). IEEE.	**2022**
15	***ICACIDF 2022, Springer Proceedings***	S Mishra, T Dash, Ganapati Panda, "An Inclusive Review on Speech based COVID-19 Detection using ML Techniques"	
16	***ICIICC- 2022, Springer Proceedings***	Mishra, S., Dash, T. K., Panda, G., Kumar, A., & Singh, S. K. (2022, December). Comparative Analysis of COVID 19 Detection from Cough Speech Using Machine Learning Classifiers. In *International Conference on Innovations in Intelligent Computing and Communications* (pp. 401-408). Cham: Springer International Publishing.	
17	***IConSIP- 2022***	Kabi, S., Patra, D., & Panda, G. (2022, August). Detection of Pneumonia from X-ray Images using Eigen Decomposition and Machine Learning techniques. In *2022 International Conference on Signal and Information Processing (IConSIP)* (pp. 1-5). IEEE.	
18	**In *International Joint Conference on Advances in Computational Intelligence***	Sharma, R., Mahanti, G. K., Panda, G., & Rath, A. (2022, October). Evaluation of Dimensionality Reduction Techniques for Thyroid Cancer Diagnosis Using Ultrasound and Histopathological Images. In *International Joint Conference on Advances in Computational Intelligence* (pp. 557-566). Singapore: Springer Nature Singapore.	
18	***I-SMAC 2023***	Sharma, R., Mahanti, G. K., & Panda, G. (2023, October). Performance Evaluation and Ranking of Deep Learning Feature Extraction Models for Thyroid Cancer Diagnosis using D-CRITIC TOPSIS. In *2023 7th International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC)* (pp. 702-708). IEEE.	**2023**
19	***IC3S***	Samanta, P. K., Rout, N. K., & Panda, G. (2023, May). A novel deep CNN model for improved breast cancer detection using ultrasound images. In *2023 International Conference on Communication, Circuits, and Systems (IC3S)* (pp. 1-4). IEEE.	

20	***ICMOCE***	Rath, A., Panda, G., Muduli, D., & Barik, R. C. (2023, May). Comparative Performance Analysis of Heart Sound based Heart Disease Classifiers Using Machine Learning Models from Balanced Datasets. In *2023 International Conference on Microwave, Optical, and Communication Engineering (ICMOCE)* (pp. 1-5). IEEE.	
21	***ICORT***	Barik, R. C., Panda, G., Ratha, A., Padhan, S., & Changder, S. (2023, February). Cyber Secure Remote Sensing Image Encryption Scheme using Blockchain and Dual Chaotic Map. In *2023 3rd International Conference on Range Technology (ICORT)* (pp. 1-6). IEEE.	
22	***ICORT***	Brahma, D., Swayamsiddha, S., & Panda, G. (2023, February). Dynamic Spectrum Allocation in Cognitive Radar: A Brief Overview. In *2023 3rd International Conference on Range Technology (ICORT)* (pp. 1-4). IEEE.	
23	***ICORT***	Sinha, A., Puhan, N. B., Dash, S. P., Mrudhul, G., & Panda, G. (2023, February). Adversarial Defense with Local Robust Principal Component Analysis and Wavelet Denoising. In *2023 3rd International Conference on Range Technology (ICORT)* (pp. 1-6). IEEE.	
24	***IDCIoT***	Ansari, M. F., Dash, B., Swayamsiddha, S., & Panda, G. (2023, January). Use of Blockchain Technology to Protect Privacy in Electronic Health Records-A Review. In *2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)* (pp. 144-149). IEEE.	
25	***AESPC***	Muduli, D., Sharma, S. K., Rath, A., Barik, R. C., & Panda, G. (2023, November). Integrating Advanced Deep Learning Features with SVM for Pathological Brain Detection: A Novel Hybrid Approach. In *2023 IEEE 3rd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)* (pp. 1-6). IEEE.	
26	***AESPC***	Samanta, P. K., Basuli, A., Rout, N. K., & Panda, G. (2023, November). Improved Breast Cancer Detection from Ultrasound Images Using YOLOv8 Model. In *2023 IEEE 3rd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)* (pp. 1-6). IEEE.	

D. Book Chapters

Sl No	Conf Name	Title	**Year of Publication**
1	***Biomedical Engineering, CRC Press*** *Deep Learning, Machine learning and IoT in Biomedical and Health Informatics Techniques and Applications*	Mishra, S., Dash, T. K., & Panda, G. (2022). Effect of Socio-economic and Environmental Factors on the Growth Rate of COVID-19 with an Overview of Speech Data for Its Early Diagnosis. *Deep Learning, Machine Learning and IoT in Biomedical and Health Informatics*, 3-20.	**2022**
2	***Springer*** *Technical advancements of machine learning in healthcare*	Rath, A., Mishra, D., & Panda, G. (2021). Deep learning neural network and CNN-based diagnosis of heart diseases. *Technical Advancements of Machine Learning in Healthcare*, 169-195.	

3	***Biomedical Health Informatics, CRC Press*** *Deep Learning, Machine learning and IoT in Biomedical and Health Informatics Techniques and Applications*	Martha, S. R., Dash, T. K., Panda, G., Mallick, S., & Patri, M. (2022). Classification of Schizophrenia Associated Proteins Using Amino Acid Descriptors and Deep Neural Network. In *Deep Learning, Machine Learning and IoT in Biomedical and Health Informatics* (pp. 199-220). CRC Press.	
4	***Elsevier*** *Signal Processing Driven Machine Learning for Cardiovascular Data Processing, 2024*	Abhay Patwari, Shaswati Dash, RK Tripathy, Ganapati Panda, RB Pachori, "Ramanujam Filter-bank domain Deep CNN for Detection of Atrial Fibrillation using 12-lead ECG", Signal Processing Driven Machine Learning for Cardiovascular Data Processing, Elsevier book, 2024	**2024**
5	***Springer***	Panda, S. K., Chandra Barik, R., Pelusi, D., & Panda, G. (2024). Machine Learning Based Intelligent Diagnosis of Brain Tumor: Advances and Challenges. *Machine Learning for Cyber Physical System: Advances and Challenges*, 287-312.	

E. Papers Submitted (Under Review)

Sl No	Journal Name	Title	**Impact Factor**	**Expected Year of Publication**
1	***IEEE*** *IEEE Sensors Journal*	Shilpa Das, G Panda. Improvement of Upper Bound on Network Lifetime of Wireless Sensor Networks Using Uneven Deployment - Submitted to IEEE Sensors Journal	**4.325**	
2	***Springer*** *Neural Computing and Applications*	Satyabrata Lenka; Zefree Lazarus Mayaluri; Ganapati Panda, "Retinal Fundus Image Enhancement using an Ensemble Framework for Accurate Glaucoma Detection."	**5.606**	**2024**
3		Priyanka Gupta, Manik Gupta, Vijay Kumar, Ganapati Panda, Weakly Supervised Learning for Internet of Things Time Series Data: Contemporary Approaches, Unresolved Challenges, and Prospective Research Avenues. **(to be submitted)**		
4	***SPIE***	Surendra kumar Panda, Ram Chandra Barik, Ganapati Panda, A Novel IoMT enabled CAD system for Brain Tumor Classification using GWO-RBFGNN model with PCA-DWT features	**0.39**	
5	***MDPI*** *Biomimetics*	Sharma, S.K.; Muduli, D.; Rath, A.; Dash, S.; *Panda, G.* Discrete Ripplet-II Transform Feature Extraction and Metaheuristic-Optimized Feature Selection for Enhanced Glaucoma Detection in Fundus Images Using LS-SVM. Preprints 2023, 2023110773. (SCIE, Biomimetics, MDPI)	**4.5**	

6	***Wiley*** *Expert Systems*	Padma Charan Sahu, Bibhu Prasad, Ratnakar Dash, Debendra Muduli, Adyasha Rath, Ganapati Panda, Sujata Dash, Saurav Mallik, Mohd Asif Shah, An Empirical Analysis of ELM based CNN Models for Automatic Modulation Classification in Wireless Communication, SCIE, Expert Systems		
7	***Elsevier*** *Image & Vision Computing*	Upasana Panigrahi Prabodh Kumar Sahoo Manoj Kumar Panda Prof. Ganapati Panda. ResNet-101 encoder decoder network with a feature pooling framework is developed for moving object detection. Image & Vision Computing, Elsevier.		
8		Upasana Panigrahi Prabodh Kumar Sahoo Manoj Kumar Panda Prof. Ganapati Panda. Slowly Moving Object Detection Using an Improved VGG-16 Deep Learning Framework Induced Feature Pooling Framework. e-Prime - Advances in Electrical Engineering, Electronics and Energy, Elsevier. **(to be communicated)**		
9	***IEEE*** *IEEE Transactions on Consumer Electronics*	P. K. Das, S. Panda, C. Chakraborty, H. K. Sahoo, and G. Panda, "Deep Learning-based Multimodal Image Retrieval System for Automatic infectious Disease Detection," IEEE Transactions on Consumer Electronics. **(to be communicated)**		
10	***IEEE*** *ISA Transactions*	P. K. Das, S. Meher, A. Rath, and G. Panda, "An Efficient Deep Learning System for Automatic Detection Acute Lymphoblastic Leukemia," ISA Transactions. **(Communicated)**		
11	***Springer*** *Multimedia Tools and Applications*	Madhumita Pal; Smita Rani Parija; Ganapati Panda. A comparative performance analysis of deep learning models for binary and multiclass classification of histopathological images for breast cancer detection		
12	***IOP Publishing*** *Physica Scripta*	T. Jaiswal, M. Pandey, P. Tripathi, G. Panda, S. Dash, and S. Malik, "Enhancing Image Captioning Efficiency with Dual Self-Attention in Encoder-Decoder Architecture," *Physica Scripta*.		
13	***Elsevier*** *Biomedical Signal Processing and Control*	T. Jaiswal, M. Pandey, P. Tripathi, and G. Panda, "Towards Precision Radiography: A Deep Dive into Dynamic Convolutional Encoder-Decoder Networks for Elevating Chest X-ray Image descriptions," *Biomedical Signal Processing and Control*. **(to be submitted)**		
14		Tarun Jaiswal, Manju Pandey, Priyanka Tripathi, Ganapati Panda, Enriching Visual Narratives: An Exploration of Image Captioning using Continuous Conditional Generative Adversarial Networks. **(to be submitted)**		

15		Yadav, A K, Y. K. Prajapati, G. Panda, and A Banerjee "Development and Performance Evaluation of an improved hybrid approach for Orthogonal Frequency Division Multiplexing model" (**to be communicated)**		
16	Springer BMC Cancer	Madhumita Pal, Smita Parija, Ganapati Panda, Adyasha Rath, Sujata Dash, Saurav Mallik, Hong Qin "Investigation on Effects of Training Schemes and Data Characteristics on Deep Learning-based Breast Cancer Classification." BMC Cancer, Springer **(Communicated)**		
17		Madhumita Pal, Ganapati Panda, Ranjan K. Mohapatra, Adyasha Rath, Sujata Dash "A comparative ensemble approach of deep learning models for binary and multiclass classification of histopathological images for breast cancer detection" **(to be communicated)**		

F. Conference Papers Submitted (Accepted)

1	***HIS 2023***	Debendra Muduli, Adyasha Rath, Ahmad Ashraf Zargar, Rojalina Priyadarshini, Surendra Nanda, Ganapati Panda. Advanced Fusion of Deep Learning and SVM for Robust Monkeypox Disease Detection: A Promising Hybrid Model, 23th International Conference on Hybrid Intelligent Systems (HIS 2023).	**2023**
1	(ICMACC 2024) ***Communicated***	Ganapati Panda, Adyasha Rath, Rishabh Anand, Tanay Deo, Dev Patel, Amit Thakkar and Bela Shah. ECG based heart disease detection using DFT convolution based Deep Neural Network. International Conference in Microelectronics, Automation, Computing and Communications Systems (ICMACC 2024)	**2024**

G. Details of PhD Guidance at CGU

I. List of students awarded PhD after joining CGU in 2019

S. No	**Name of the Students**	**Year**
1	Safwan Ghanem (C V Raman Global University)	2022
2	Soumya Mishra (C V Raman Global University)	2023
3	Adyasha Rath (SoA University)	2023
4	Madumita Pal (C V Raman Global University)	2024
5	Rohit Sharma (NIT Durgapur)	2024

II. List of Students Submitted PhD Thesis

S. No	Name of the Student
1	Barnali Brahma (C V Raman Global University)
2	Jagannath Dayal Pradhan (C V Raman Global University)

III. List of Students continuing PhD

S. No	Name of the Students
1	Surendra Kumar Panda (C V Raman Global University)
2	Subrat Kabi (NIT Rourkela)
3	Priya Das (KIIT University)
4	Debashree Brahma (KIIT University)
5	Praveen Samanta (KIIT University)
6	Smita Ranjan Tripathy (C V Raman Global University)
7	Nigamananda Mishra (C V Raman Global University)
8	Jeetamitra Satapathy (C V Raman Global University)
9	Subhasish Rath (C V Raman Global University)

H. RESEARCH Projects

S. No	Project Details
1	"NEP-2020, Implementation using AL-ML Techniques" T Dash, A.K. Yadav, Dr. G. Panda and Dr. Chinmay Chakraborty (Indian Council of Social Science Research, Ministry of Education, Govt. of India 2023)- Cost of Project- **Rs 15 Lakhs (Completed)**
2	"Development and Implementation of Dynamic Spectrum Allocation Technique in Cognitive Radio Network for IoT Applications", Science and Engineering Research Board (SERB), Govt. of India, Cost of the Project: **21 Lakhs**
3	"Artificial intelligence-based center for renewable energy and drone technology advancement" Dr. T. K Dash, Dr. Nandini Sahu, Dr. G Panda, Dr. Adyasha Rath (Ministry of Science & Technology, Govt.of India), Cost of Project- **15 Crore** (Under Review)- (PURSE), **Submitted on 31st March 2024**
4	"AI Techniques and applications to wearable intelligent devices for elderly and handicapped people" Dr. R. Priyadarshini, Dr. S. K. Nanda, Dr. G. Panda, Dr. Debendra Muduli, Dr. Adyasha Rath (Department of Science & Technology), Cost of Project - **Rs 3 Crore** (Under Review) – (FIST), **Submitted on 30th April 2024**
5	"Artificial Intelligence based Smart Impact Assessment Scheme of Vigyan Jyoti Program for the state of Odisha and Jharkhand" Dr. T. Dash, Dr. A. K. Yadav, Dr. Ganapati Panda, Dr. Adyasha Rath, (Department of Science & Technology), Cost of Project - **25 Lakhs**, **Submitted on 30th May 2024**
6	"NEP-2020, Implementation using AL-ML Techniques for school education of Odisha & Jharkhand" T Dash, A.K. Yadav, Dr. G. Panda, Dr. M. Tiwari and Dr. A Rath (Indian Council of Social Science Research, Ministry of Education, Govt. of India 2023)- Cost of Project- **Rs 10 Lakhs** (to be submitted on 28th June 2024**)**