

AUROBINDA ROUTRAY

1. Name and full correspondence address

Aurobinda Routray
Department of Electrical Engineering
IIT Kharagpur, West Bengal, 721302

2. Email(s) and contact number(s)

aroutray@ee.iitkgp.ac.in
aurobinda.routray@gmail.com(P)
+91 9434041933(C),
+91-3222-283072(O)

3. Institution

Indian Institute of Technology, Kharagpur

4. Researcher unique identifier(s)

ORCID: 0000-0003-2750-6768
SCOPUS ID: 55927861800

5. Date of Birth

26th June 1968

6. Academic Qualification (Undergraduate Onwards)

	Degree	Year	Subject/ Topic(s)	University/Institution
1	B. Tech	1989	Electrical Engineering	National Institute of Technology, Rourkela
2	M. Tech	1991	Electrical Engineering	Indian Institute of Technology, Kanpur
3	Ph.D	1999	Design of Intelligent controllers for HVDC converters	Sambalpur University
4	Post Doctorate	2004	Mathematical Signal Processing	Purdue University

7. Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Design of Intelligent controllers for HVDC converters, Prof. P. K. Dash, Sambalpur University, 1999

8. Work experience (in chronological order).

	Positions held	Name of the Institute	From	To
1	Professor	IIT Kharagpur	23/8/2011	Now
2	Associate dean infrastructure (Electrical)	IIT Kharagpur	23/06/2020	06/01/2023
3	Associate professor	IIT Kharagpur	09/08/2004	22/08/2011
4	Lecturer	N.I.T. Rourkela	1992	1999
5	Research Engineer	N.I.T. Rourkela	1991	1992

9. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

	Name of Award	Awarding Agency	Year
1	Young Scientist Award	Orissa Bigyan Academy	2001
2	BOYSCAST Fellow Award	Department of Science and Technology	2003
3	Samsung Global Research Outreach (GRO)	Samsung	2012

4	BioEye 2015 Competition	IEEE	2015
5	NASA HysPIRI Science Symposium 2015, Goddard USA	NASA Goddard Space Centre	2015

Quick links

Publications	Patents	Books/Chapters	Other information
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10. Publications *(List of papers published in SCI Journals, in year wise descending order).*

#	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	K Mohamed Ismail Yasar Arafath, Aurobinda Routray	Detection of breath sounds in speech: A deep learning approach	Detection of breath sounds in speech: A deep learning approach	141	109808	2025
2.	Pooja Kumawat, Aurobinda Routray	Extending speech emotion recognition systems to non-prototypical emotions using mixed-emotion model	Expert Systems with Applications	260	125358	2025
3.	Gagandeep Singh, William K Mohanty, Aurobinda Routray, Rahul Mahadik, SK Singh	Enhancing seismic feature orientations: A novel approach using directional derivatives and Hilbert transform of gradient structure tensor	Journal of Applied Geophysics	230	105528	2024
4.	Meghabriti Pramanik, Aurobinda Routray, Pabitra Mitra	A framework for complex power quality disturbances classification and parameter estimation using convolutional neural network and square-root cubature Kalman filter in compressed sensing domain	Electric Power Systems Research	236	110893	2024
5.	Sanhita Mishra, Subhadeep Roy, Aurobinda Routray, Sarat Chandra Swain, Pradip Kumar Sadhu	Enhanced fault classification in underground cable systems: a three-step framework utilizing evolutionary optimization for signal tracking and parameter estimation	Microsystem Technologies	30	1325-1340	2024
6.	Sourav Bagchi, Mamata Jenamani, Aurobinda Routray	A novel data transformation for improving predictive accuracy of online missing value imputation during reefer container monitoring	IEEE Sensors Journal			2024
7.	Tiash Ghosh, Mohammed Fayiz Parappan, Mamata Jenamani, Aurobinda Routray, Sanjai Kumar Singh	Unveiling the Subsurface Faults in Indian Krishna Godavari Basin: A Domain Adaptation Approach	IEEE Transactions on Geoscience and Remote Sensing	62	1-9	2024
8.	Ritesh Chandra Tewari, Aurobinda Routray, Jhareswar Maiti	State-of-the-art radar technology for remote human fall detection: a systematic review of techniques, trends, and challenges	Multimedia Tools and Applications		1-59	2024
9.	Meghabriti Pramanik, Aurobinda Routray, Pabitra Mitra	A framework for complex power quality disturbances classification and parameter estimation using convolutional neural network and	Electric Power Systems Research	236	110893	2024

		square-root cubature Kalman filter in compressed sensing domain				
10.	Laxmipriya Moharana, Niva Das, Aurobinda Routray	An Application of Computer Vision Techniques to Study the Relationship between Mental Stress and Pupil Diameter among University Students.	International Journal of Online & Biomedical Engineering	20	8	2024
11.	Deepan Datta, Mamata Jenamani, Aurobinda Routray, Sanjai K Singh	Enhancing Lithofacies Interpretation in Well Logs with Graph-Based Feature Extraction	IEEE Geoscience and Remote Sensing Letters			2024
12.	Saswata Satpathi, K Mohamed Ismail Yasar Arafath, Aurobinda Routray, Partha Sarathi Satpathi	Analysis of thermal videos for detection of lie during interrogation	EURASIP Journal on Image and Video Processing	1	9	2024
13.	Laxmipriya Moharana, Niva Das, Satyajit Nayak, Aurobinda Routray	Applying computer vision techniques to depression symptomatology through eye blink patterns in university students	Educational and Developmental Psychologist	41	106-117	2024
14.	Sanhita Mishra, Subhadeep Roy, Aurobinda Routray, Sarat Chandra Swain, Pradip Kumar Sadhu	Enhanced fault classification in underground cable systems: a three-step framework utilizing evolutionary optimization for signal tracking and parameter estimation	Microsystem Technologies		1-16	2023
15.	Satpathi, S., Kumawat, P., Routray, A., & Satpathi, P. S. (2023).	Detection of Deceit Using Speech and Thermal Videos During Interactive Sessions: An Integrated Analysis	Sociology and Criminology-Open Access	10	10	2023
16.	Ritesh Chandra Tewari, Sandeep Sharma, Aurobinda Routray, Jhareswar Maiti	Effective fall detection and post-fall breath rate tracking using a low-cost CW Doppler radar sensor	Computers in biology and medicine	164	107315	2023
17.	Laxmipriya Moharana, Niva Das, Satyajit Nayak, Aurobinda Routray	Applying computer vision techniques to depression symptomatology through eye blink patterns in university students	Educational and Developmental Psychologist		1-12	2023
18.	Gagandeep Singh, Rahul Mahadik, William K Mohanty, Aurobinda Routray, Deepan Datta, Sanket Smarak Panda	Seismic multi-attribute approach using visual saliency for subtle fault visualization	Exploration Geophysics	54	387-394	2023
19.	Deepan Datta, Gagandeep Singh, Sanjai Kumar Singh, Mamata Jenamani, Aurobinda Routray	Application of multivariate change detection in automated lithofacies classification from well-log data in a nonstationary subsurface	Journal of Applied Geophysics		105094	2023
20.	Arpita Mondal, Aurobinda Routray, Sreeraj Puravankara	State-of-Health Estimation of Li-ion Batteries using Semi-parametric Adaptive Transfer learning	IEEE Transactions on Transportation Electrification			2023
21.	Patitapaban Palo, Aurobinda Routray	An optimized patch-point based approach for seismic fault interpretation using CNN	Exploration Geophysics		1-17	2023
22.	Patitapaban Palo, Aurobinda	Fault detection in seismic data using	The Journal of		1-29	2023

	Routray, Rahul Mahadik, Sanjai Singh	graph convolutional network	Supercomputing			
23.	Suparna Rooj, Aurobinda Routray, Manas K Mandal	Feature based analysis of thermal images for emotion recognition	Engineering Applications of Artificial Intelligence	120	105809	2023
24.	Tiash Ghosh, Ratul Kishore Saha, Sanjai Kumar Singh, Mamata Jenamani, Aurobinda Routray	LRSTV: A low-rank total variation-based seismic fault preserving denoising algorithm	Journal of Applied Geophysics		104948	2023
25.	Ishita Sar, Aurobinda Routray, Biswajit Mahanty	A Review on Existing Technologies for the Identification and Measurement of Abnormal Driving	International Journal of Intelligent Transportation Systems Research		1-19	2023
26.	Sanhita Mishra, Sarat Chandra Swain, Tapaswini Biswal, Aurobinda Routray	Tree Based Fault Classification in Underground Cable	Procedia Computer Science	218	524-531	2023
27.	Gagandeep Singh, Rahul Mahadik, William K Mohanty, Aurobinda Routray, Deepan Datta, Sanket Smarak Panda	Seismic multi-attribute approach using visual saliency for subtle fault visualization	Exploration Geophysics		1-8	2022
28.	Arvind Kumar Gupta, Aurobinda Routray, VN Achutha Naikan	Detection of power theft in low voltage distribution systems: a review from the Indian perspective	IETE Journal of Research	68	4180-4197	2022
29.	Monorama Swain, Bubai Maji, P Kabisatpathy, Aurobinda Routray	A DCRNN-based ensemble classifier for speech emotion recognition in Odia language	Complex & Intelligent Systems	8	4237-4249	2022
30.	Meghabriti Pramanik, Aurobinda Routray, Pabitra Mitra	A two-stage adaptive symmetric-strong-tracking square-root cubature Kalman filter for harmonics and interharmonics estimation	Electric Power Systems Research	210	108133	2022
31.	Arpita Mondal, Aurobinda Routray, Sreeraj Puravankara	Parameter identification and co-estimation of state-of-charge of Li-ion battery in real-time on Internet-of-Things platform	Journal of Energy Storage	51	104370	2022
32.	Soumi Chaki, Aurobinda Routray, William K Mohanty	A probabilistic neural network (PNN) based framework for lithology classification using seismic attributes	Journal of Applied Geophysics	199	104578	2022
33.	Shubhobrata Bhattacharya, Aurobinda Routray	Heterogeneous face quality assessment	Neural Computing and Applications		1-14	2022
34.	Satyajit Nayak, Aurobinda Routray, Monalisa Sarma, Satarupa Uttarkabat	GNN based Embedded Framework for Consumer Affect Recognition using Thermal Facial ROIs	IEEE Consumer Electronics Magazine			2022
35.	Teja Mannepalli, Aurobinda Routray	Sparse algorithms for EEG source localization	Medical & Biological Engineering & Computing	59	2325-2352	2021
36.	Dasgupta, Anirban, Routray, Aurobinda	A New Multi-resolution Analysis Method for Electrooculography Signals	IEEE Transactions on Neural Systems and Rehabilitation Engineering	1-1		2021
37.	Dasgupta Anirban, Routray	Piecewise empirical mode Bayesian	Biomedical Signal	70		2021

	Aurobinda	estimation – A new method to denoise electrooculograms	Processing and Control			
38.	Vrinda Prajapati ,Rajlakshmi Guha,Aurobinda Routray	Multimodal prediction of trait emotional intelligence–Through affective changes measured using non-contact based physiological measures	PLoS ONE			2021
39.	Ruphan Swaminathan, Sanhita Mishra, Aurobinda Routray & Sarat Chandra Swain	A CNN-LSTM-based fault classifier and locator for underground cables	Neural Computing and Applications (2021)			2021
40.	Satyajit Nayak, Bingi Nagesh, Aurobinda Routray, Monalisa Sarma	A Human–Computer Interaction framework for emotion recognition through time-series thermal video sequences	Computers & Electrical Engineering	93	107280	2021
41.	Rahul Mahadik, Gagandeep Singh, Aurobinda Routray	Multispectral Coherence Analysis for Better Fault Visualization in Seismic Data	IEEE Geoscience and Remote Sensing Letters			2021
42.	Laxmi Shaw, Aurobinda Routray	Brain State Classification with Group l1-norm Sparse PDC as Novel Features for EEG	IEEE Sensors Journal	0	0	2021
43.	Shubhobrata Bhattacharya, Chirag Kyal, Aurobinda Routray	Simplified Face Quality Assessment (SFQA)	Pattern Recognition Letters	147	108-114	2021
44.	A. K. Samanta, A. Routray, S. R. Khare and A. Naha	Minimum Distance-Based Detection of Incipient Induction Motor Faults Using Rayleigh Quotient Spectrum of Conditioned Vibration Signal	IEEE Transactions on Instrumentation and Measurement	70	1-11	2021
45.	Gupta, Arvind Kumar, Aurobinda Routray, and VN Achutha Naikan	Detection of Power Theft in Low Voltage Distribution Systems: A Review from the Indian Perspective	IETE Journal of Research (2020)	1	1-18	2020
46.	Samanta, Anik Kumar Routray, Aurobinda Khare, Swanand R. Naha, Arunava	Direct estimation of multiple time-varying frequencies of non-stationary signals	Signal Processing	169		2020
47.	Das, Samiran Routray, Aurobinda Deb, Alok Kanti	Efficient tensor decomposition approach for estimation of the number of endmembers in a hyperspectral image	Journal of Applied Remote Sensing	14	1	2020
48.	Biswas, Rajashree Routray, Aurobinda	A Simple Method to Localize and Monitor the Emissive Sources in a Converter Panel	IEEE Transactions on Industrial Electronics	0	1	2020
49.	Bhattacharya, Shubhobrata Dasgupta, Anirban Routray, Aurobinda	Multi-directional local adjacency descriptors (MDLAD) for heterogeneous face recognition	IET Image Processing	14	982-994	2020
50.	Biswas, Rajashree Routray, Aurobinda	Application of EMR Signature in Health Assessment and Monitoring of IGBT-Based Converters	IEEE Transactions on Power Electronics	35	1899-1906	2020
51.	Anirban Dasgupta; Som Madhab Bhattacharya; Aurobinda Routray	A System for Noncontact Estimation of Cognitive Load Using Saccadic Parameters Based on a Serio-Parallel	IEEE Transactions on Cognitive and Developmental	11	450-459	2019

		Computing Framework	Systems			
52.	Das, Samiran Chakraborty, Sohom Routray, Aurobinda Deb, Alok Kanti	Library-aided bilinear unmixing of hyperspectral image using subspace clustering and multistep pruning	Journal of Applied Remote Sensing	13	1	2019
53.	Pramanik, Meghabriti Routray, Aurobinda Mitra, Pabitra	Accurate Real-Time Estimation of Power System Transients Using Constrained Symmetric Strong Tracking Square-Root Cubature Kalman Filter	IEEE Access	7	165692-165709	2019
54.	Subhasmita Sahoo, Aurobinda Routray	Dual estimation based vocal tract shape computation	International Journal of Speech Technology	22	575-584	2019
55.	Soumi Chaki, Aurobinda Routray, William K Mohanty	A Novel Preprocessing Method Based on Variational Mode Decomposition for Reservoir Characterization Using Support Vector Regression	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing		1-10	2019
56.	Das, Samiran, Shubhobrata Bhattacharya, Aurobinda Routray, and Alok Kanti Deb.	Band Selection of Hyperspectral Image by Sparse Manifold Clustering.	IET Image Processing	13	1625-1635	2019
57.	Das, Samiran, Aurobinda Routray, and Alok Kanti Deb.	Sparsity Measure Based Library Aided Unmixing of Hyperspectral Image.	IET Image Processing	13	2077-2085	2019
58.	Agarwal, Sumit, Harshit S. Sikchi, Suparna Rooj, Shubhobrata Bhattacharya, and Aurobinda Routray.	Illumination-Invariant Face Recognition by Fusing Thermal and Visual Images via Gradient Transfer.	In Advances in Intelligent Systems and Computing	943	658-670	2019
59.	Bhattacharya, Shubhobrata, Suparna Rooj, and Aurobinda Routray.	QDF: A Face Database with Varying Quality.	Signal Processing: Image Communication	74	13-20	2019
60.	Chaudhuri, Aritra, and Aurobinda Routray.	Driver Fatigue Detection Through Chaotic Entropy Analysis of Cortical Sources Obtained From Scalp EEG Signals.	IEEE Transactions on Intelligent Transportation Systems		1-14	2019
61.	Bhattacharya, Shubhobrata, Gowtham Sandeep Nainala, Suparna Rooj, and Aurobinda Routray.	Local Force Pattern (LFP): Descriptor for Heterogeneous Face Recognition.	Pattern Recognition Letters	125	63-70	2019
62.	Das, Samiran, and Aurobinda Routray.	Covariance Similarity Approach for Semiblind Unmixing of Hyperspectral Image.	IEEE Geoscience and Remote Sensing Letters		1-5	2019
63.	Mohanty, Ramanarayan, S. L. Happy, and Aurobinda Routray.	A Semisupervised Spatial Spectral Regularized Manifold Local Scaling Cut With HGF for Dimensionality Reduction of Hyperspectral Images.	IEEE Transactions on Geoscience and Remote Sensing	57	1-13	2019
64.	Dasgupta, Anirban, Som Madhab Bhattacharya, and Aurobinda Routray.	A System for Non-Contact Estimation of Cognitive Load Using Saccadic Parameters Based on a Serio-Parallel	IEEE Transactions on Cognitive and Developmental		1-1	2019

		Computing Framework.	Systems			
65.	Shaw, Laxmi, and Aurobinda Routray.	A New Framework to Infer Intra- and Inter-Brain Sparse Connectivity Estimation for EEG Source Information Flow.	IEEE Sensors Journal	18	10134-44	2018
66.	Mannepalli, Teja, and Aurobinda Routray.	Certainty Based Reduced Sparse Solution for Dense Array EEG Source Localization.	IEEE Transactions on Neural Systems and Rehabilitation Engineering	27		2018
67.	Basu, Anushree, Anirban Dasgupta, Anirud Thyagarajan, Aurobinda Routray, Rajlakshmi Guha, and Pabitra Mitra.	A Portable Personality Recognizer Based on Affective State Classification Using Spectral Fusion of Features.	IEEE Transactions on Affective Computing			2018
68.	Shaw, Laxmi, and Aurobinda Routray.	Topographical Assessment of Neurocortical Connectivity by Using Directed Transfer Function and Partial Directed Coherence during Meditation.	Cognitive Processing			2018
69.	Shaw, Laxmi, Daleef Rahman, and Aurobinda Routray.	Highly Efficient Compression Algorithms for Multichannel EEG.	IEEE Transactions on Neural Systems and Rehabilitation Engineering	26	957-68	2018
70.	Sahoo, Subhasmita, and Aurobinda Routray.	Detecting Aggression in Voice Using Inverse Filtered Speech Features.	IEEE Transactions on Affective Computing	9	217-26	2018
71.	Dasgupta, Anirban, Daleef Rahman, and Aurobinda Routray.	A Smartphone-Based Drowsiness Detection and Warning System for Automotive Drivers.	IEEE Transactions on Intelligent Transportation Systems		1-10	2018
72.	Chaki, Soumi, Aurobinda Routray, and William K. Mohanty.	Well-Log and Seismic Data Integration for Reservoir Characterization: A Signal Processing and Machine-Learning Perspective.	IEEE Signal Processing Magazine	35	72-81	2018
73.	Mohanty, Ramanarayan, S. L. Happy, and Aurobinda Routray.	Spatial-Spectral Regularized Local Scaling Cut for Dimensionality Reduction in Hyperspectral Image Classification.	IEEE Geoscience and Remote Sensing Letters		1-5	2018
74.	Samanta, Anik Kumar, Arunava Naha, Aurobinda Routray, and Alok Kanti Deb.	Fast and Accurate Spectral Estimation for Online Detection of Partial Broken Bar in Induction Motors.	Mechanical Systems and Signal Processing	98	63-67	2018
75.	Das, Samiran, Aurobinda Routray, and Alok Kanti Deb.	Fast Semi-Supervised Unmixing of Hyperspectral Image by Mutual Coherence Reduction and Recursive PCA.	Remote Sensing	10	1106	2018
76.	Mohanty, Ramanarayan, S. L. Happy, and Aurobinda Routray.	A Supervised Geometry-Aware Mapping Approach for Classification of Hyperspectral Images.	IEEE Geoscience and Remote Sensing Letters	15	582-86	2018
77.	Swain, Monorama, Aurobinda Routray, and P. Kabisatpathy.	Databases Features and Classifiers for Speech Emotion Recognition: A	International Journal of Speech	21	93-120	2018

		Review.	Technology			
78.	Chakraborty, Suvodip, Anirban Dasgupta, and Aurobinda Routray.	Localization of Eye Saccadic Signatures in Electrooculograms Using Sparse Representations with Data Driven Dictionaries.	Pattern Recognition LetterS		5043-5048	2017
79.	Happy, S. L., Priyadarshi Patnaik, Aurobinda Routray, and Rajlakshmi Guha.	The Indian Spontaneous Expression Database for Emotion Recognition.	IEEE Transactions on Affective Computing	8	131-42	2017
80.	Mukherjee, Rashmi, Suman Tewary, and Aurobinda Routray.	Diagnostic and Prognostic Utility of Non-Invasive Multimodal Imaging in Chronic Wound Monitoring: A Systematic Review.	Journal of Medical Systems	41	46	2017
81.	Sengupta, Anwesha, Anirban Dasgupta, Aritra Chaudhuri, Anjith George, Aurobinda Routray, and Rajlakshmi Guha.	A Multimodal System for Assessing Alertness Levels Due to Cognitive Loading.	IEEE Transactions on Neural Systems and Rehabilitation Engineering	25	1037-46	2017
82.	Shaw, Laxmi, Aurobinda Routray, and Sirin Sanchay.	A Robust Motifs Based Artifacts Removal Technique from EEG.	Biomedical Physics & Engineering Express	3	35010	2017
83.	Happy, S. L., and Aurobinda Routray.	Fuzzy Histogram of Optical Flow Orientations for Micro-Expression Recognition.	IEEE Transactions on Affective Computing		1-1	2017
84.	Naha, Arunava, Anik Kumar Samanta, Aurobinda Routray, and Alok Kanti Deb.	Low Complexity Motor Current Signature Analysis Using Sub-Nyquist Strategy with Reduced Data Length.	IEEE Transactions on Instrumentation and Measurement	66	3249-59	2017
85.	Naha, Arunava, Korada Ravisri Thammayyabbabu, Anik Kumar Samanta, Aurobinda Routray, and Alok Kanti Deb.	Mobile Application to Detect Induction Motor Faults.	IEEE Embedded Systems Letters	9	117-20	2017
86.	Chaki, Soumi, Aurobinda Routray, and William K. Mohanty.	A Diffusion Filter Based Scheme to Denoise Seismic Attributes and Improve Predicted Porosity Volume.	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing	10	5265-74	2017
87.	Dasgupta, Anirban, Suvodip Chakraborty, and Aurobinda Routray.	A Two-Stage Framework for Denoising Electrooculography Signals.	Biomedical Signal Processing and Control	31	231-37	2017
88.	Mukherjee, Ayan, Aurobinda Routray, and Anik Kumar Samanta.	Method for Online Detection of Arcing in Low-Voltage Distribution Systems.	IEEE Transactions on Power Delivery	32	1244-52	2017
89.	George, Anjith, and Aurobinda Routray.	A Score Level Fusion Method for Eye Movement Biometrics.	Pattern Recognition Letters	82	207-15	2016
90.	Basu, Anushree, Aurobinda Routray, Rashmi Mukherjee, and Suprosanna Shit.	Infrared Imaging Based Hyperventilation Monitoring through Respiration Rate Estimation.	Infrared Physics and Technology	77	382-90	2016
91.	Sahoo, Subhasmita, and Aurobinda Routray.	A Novel Method of Glottal Inverse Filtering.	IEEE/ACM Transactions on Audio Speech and Language Processing	24	1230-41	2016
92.	George, Anjith, and Aurobinda	Fast and Accurate Algorithm for Eye	IET Computer Vision	10	660-69	2016

	Routray.	Localization for Gaze Tracking in Low Resolution Images.				
93.	Naha, Arunava, Anik Kumar Samanta, Aurobinda Routray, and Alok Kanti Deb.	A Method for Detecting Half-Broken Rotor Bar in Lightly Loaded Induction Motors Using Current.	IEEE Transactions on Instrumentation and Measurement	65	1614-25	2016
94.	Sahadevan, Anand S., Aurobinda Routray, Bhabani S. Das, and Saquib Ahmad.	Hyperspectral Image Preprocessing with Bilateral Filter for Improving the Classification Accuracy of Support Vector Machines.	Journal of Applied Remote Sensing	10	25004	2016
95.	Pradhan, Tapan, Bibek Kabi, Ramanarayan Mohanty, and Aurobinda Routray.	Development of Numerical Linear Algebra Algorithms in Dynamic Fixed-Point Format: A Case Study of Lanczos Tridiagonalization.	International Journal of Circuit Theory and Applications	44	1222-62	2016
96.	Sengupta, Anwesha, Subhadeep Datta, Sibsambhu Kar, and Aurobinda Routray.	EEG Synchronization and Brain Networks.	International Journal of Biomedical and Clinical Engineering	4	1-11	2015
97.	Happy, S. L., and Aurobinda Routray.	Automatic Facial Expression Recognition Using Features of Salient Facial Patches.	IEEE Transactions on Affective Computing	6	1-12	2015
98.	Sengupta, Anwesha, Sibsambhu Kar, and Aurobinda Routray.	Study of Loss of Alertness and Driver Fatigue Using Visibility Graph Synchronization.	Innovative Research in Attention Modeling and Computer Vision Applications		171-93	2015
99.	Swain, Monorama, Subhasmita Sahoo, Aurobinda Routray, P. Kabisatpathy, and Jogendra N. Kundu.	Study of Feature Combination Using HMM and SVM for Multilingual Odiya Speech Emotion Recognition.	International Journal of Speech Technology	18	387-93	2015
100.	Chaki, Soumi, Aurobinda Routray, and William K. Mohanty.	A Novel Preprocessing Scheme to Improve the Prediction of Sand Fraction from Seismic Attributes Using Neural Networks.	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing	8	1808-20	2015
101.	Verma, Akhilesh K., Aurobinda Routray, and William K. Mohanty.	Assessment of Similarity between Well Logs Using Synchronization Measures.	IEEE Geoscience and Remote Sensing Letters	11	2032-36	2014
102.	Naha, Arunava, Anik Kumar Samanta, Aurobinda Routray, and Alok Kanti Deb.	Determining Autocorrelation Matrix Size and Sampling Frequency for MUSIC Algorithm.	IEEE Signal Processing Letters	22	1016-20	2014
103.	Chaki, Soumi, Akhilesh K. Verma, Aurobinda Routray, William K. Mohanty, and Mamata Jenamani.	Well Tops Guided Prediction of Reservoir Properties Using Modular Neural Network Concept: A Case Study from Western Onshore India.	Journal of Petroleum Science and Engineering	123	155-63	2014
104.	Verma, Akhilesh K., Soumi Chaki, Aurobinda Routray, William K. Mohanty, and Mamata Jenamani.	Quantification of Sand Fraction from Seismic Attributes Using Neuro-Fuzzy Approach.	Journal of Applied Geophysics	111	141-55	2014
105.	Dasgupta, Anirban, Anjith George, S. L. Happy, and	A Vision-Based System for Monitoring the Loss of Attention in	IEEE Transactions on Intelligent	14	1825-38	2013

	Aurobinda Routray.	Automotive Drivers.	Transportation Systems			
106.	Pradhan, Tapan, Bibek Kabi, Aurobinda Routray, and Gonnabhaktula Anirudh.	Fixed-Point Hestenes SVD Algorithm for Computing Eigen Faces.	International Journal of Circuits, Systems and Signal Processing	7	312-21	2013
107.	Kar, Sibsambhu, and Aurobinda Routray.	Effect of Sleep Deprivation on Functional Connectivity of EEG Channels.	IEEE Transactions on Systems, Man, and Cybernetics Part A: Systems and Humans	43	666-72	2013
108.	Dasgupta, Anirban, Anjith George, S. L. Happy, Aurobinda Routray, and Tara Shanker.	An On-Board Vision Based System for Drowsiness Detection in Automotive Drivers.	International Journal of Advances in Engineering Sciences and Applied Mathematics	5	94-103	2013
109.	Ghosh, Shrabani, Anirban Krishna Bhattacharyya, Siddhartha Mukhopadhyay, and Aurobinda Routray.	Improved Estimation of Kinematic State of Reentry Ballistic Targets with Modeling of Colored and Nonstationary Seeker Noise.	IEEE Transactions on Aerospace and Electronic Systems	48	3186-3206	2012
110.	Mohanty, Mihir Narayan, Aurobinda Routray, Ashok Kumar Pradhan, and Prithviraj Kabisatpathy.	Power Quality Disturbances Classification Using Support Vector Machines with Optimised Time-Frequency Kernels.	International Journal of Power Electronics	4	181	2012
111.	Ghosh, Shrabani, Siddhartha Mukhopadhyay, and Aurobinda Routray.	New State and Measurement Models for Endo-Atmospheric Tracking of Ballistic Targets Using Seeker Measurements.	IEEE Transactions on Aerospace and Electronic Systems	48	1192-1209	2012
112.	Kar, Sibsambhu, Aurobinda Routray, and Bibhukalyan Prasad Nayak.	Functional Network Changes Associated with Sleep Deprivation and Fatigue during Simulated Driving: Validation Using Blood Biomarkers.	Clinical Neurophysiology	122	966-74	2011
113.	Mohanty, Mihir Narayan, Aurobinda Routray, and Prithviraj Kabisatpathy.	Optimisation of Features Using Evolutionary Algorithm for EEG Signal Classification.	International Journal of Computational Vision and Robotics	1	297	2011
114.	Senapati, Kedarnath, and Aurobinda Routray.	Comparison of ICA and WT with S-Transform Based Method for Removal of Ocular Artifact from EEG Signals.	Journal of Biomedical Science and Engineering	4	341-51	2011
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11. Detail of Patents. ()

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1	A System for Real Time Assessment of Level of Alertness	Aurobinda Routray	634/KOL/2014	2014	India	Granted
2	An Electromagnetic Device based system for Fault Detection and Identification in Rotating Mechanical Components	Aurobinda Routray	803/KOL/2005	2005	India	Granted
3	Event-Driven Data Mining Method for Improving Fault Code Settings and Isolating Faults	Aurobinda Routray	US 2012/0035803 A1	2012	USA	Granted
4	A Real-Time System for Object Detection and Recognition With Machine Learning	Aurobinda Routray	647/KOL/2013	2013	India	Filed
5	Real-time on Board Driver Drowsiness Monitoring System	Aurobinda Routray	660/KOL/2010	2010	India	Filed
6	Fatigue Monitoring system	Aurobinda Routray	201711043780 A	2019	India	Granted
7	A System and method for Spark/Arc Detection in Low Voltage Electrical Distribution System	Aurobinda Routray	924/KOL/2013	2013	India	Under review
8	System and method for monitoring drowsiness of one or more operator individuals of industrial equipment/means/process and like	Aurobinda Routray	IN201831004156	2019	India	Granted
9	A system for assessment of multiple faults in induction motors	Aurobinda Routray	201831003744 A	2019	India	Granted
10	An apparatus for classifying the state of alertness of a locomotive pilot	Aurobinda Routray	201831003743 A	2019	India	Granted
11	Method for suppressing noise from 3d stacked time domain seismic cube	Aurobinda Routray	202111022114	2021	India	Filed

12. Books/Reports/Chapters/General articles etc. ()

S.No	Title	Author's Name	Publisher	Year of Publication
1	Alertness Monitoring System for Vehicle Drivers using Physiological Signals	Sengupta, Anwesha, George, Anjith Dasgupta, Anirban Chaudhuri, Aritra Kabi, Bibek Routray, Aurobinda	IGI Global	2016
2	Online Condition Monitoring of Traction Motor	Samanta, Anik Kumar and Naha, Arunava and Basu, Devasish and Routray, Aurobinda and Deb, Alok Kanti	IGI Global	2016
3	Study of Loss of Alertness and Driver Fatigue Using Visibility Graph Synchronization	Sengupta, Anwesha Kar, Sibsambhu Routray, Aurobinda	IGI Global	2015

4	Comparative Evaluation of Symmetric SVD Algorithms for Real-Time Face and Eye Tracking	Pradhan, Tapan Routray, Aurobinda Kabi, Bibek	Springer	2012
5	Numerical Linear Algebra in Signals, Systems and Control	Van Dooren, P. Bhattacharyya, S.P., Chan, R.H., Olshevsky, V, Routray, A. (Eds.)	Springer	2011

13. Other Activities

Founder of the following startups at STEP IIT Kharagpur for human monitoring

- www.humosys.com
- www.sleepdoc.ai (mbreath)
- www.auroma.ai
- www.emsig.co.in
- www.goujata.com

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