

# Koushik Maharatna

## List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

94 papers	1,673 citations	23 h-index	38 g-index
97 ext. papers	2,063 ext. citations	3.9 avg, IF	4.64 L-index

#	Paper	IF	Citations
94	50 Years of CORDIC: Algorithms, Architectures, and Applications. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , <b>2009</b> , 56, 1893-1907	3.9	291
93	A low-complexity ECG feature extraction algorithm for mobile healthcare applications. <i>IEEE Journal of Biomedical and Health Informatics</i> , <b>2013</b> , 17, 459-69	7.2	121
92	How children with autism spectrum disorder behave and explore the 4-dimensional (spatial 3D + time) environment during a joint attention induction task with a robot. <i>Research in Autism Spectrum Disorders</i> , <b>2014</b> , 8, 814-826	3	92
91	A 64-point Fourier transform chip for high-speed wireless LAN application using OFDM. <i>IEEE Journal of Solid-State Circuits</i> , <b>2004</b> , 39, 484-493	5.5	88
90	Recognizing upper limb movements with wrist worn inertial sensors using k-means clustering classification. <i>Human Movement Science</i> , <b>2015</b> , 40, 59-76	2.4	60
89	Classification of autism spectrum disorder using supervised learning of brain connectivity measures extracted from synchrostates. <i>Journal of Neural Engineering</i> , <b>2014</b> , 11, 046019	5	56
88	CNN based approach for activity recognition using a wrist-worn accelerometer. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2017</b> , 2017, 2438-2441	0.9	54
87	On the application of quantitative EEG for characterizing autistic brain: a systematic review. <i>Frontiers in Human Neuroscience</i> , <b>2013</b> , 7, 442	3.3	53
86	Rehab-Net: Deep Learning Framework for Arm Movement Classification Using Wearable Sensors for Stroke Rehabilitation. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2019</b> , 66, 3026-3037	5	51
85	Modeling SWCNT Bandgap and Effective Mass Variation Using a Monte Carlo Approach. <i>IEEE Nanotechnology Magazine</i> , <b>2010</b> , 9, 184-193	2.6	42
84	A VLSI array architecture for realization of DFT, DHT, DCT and DST. <i>Signal Processing</i> , <b>2001</b> , 81, 1813-1822	2.4	32
83	Exploring strategies for classification of external stimuli using statistical features of the plant electrical response. <i>Journal of the Royal Society Interface</i> , <b>2015</b> , 12, 20141225	4.1	31
82	Hybrid wavelet and EMD/ICA approach for artifact suppression in pervasive EEG. <i>Journal of Neuroscience Methods</i> , <b>2016</b> , 267, 89-107	3	31
81	Fractional dynamical model for the generation of ECG like signals from filtered coupled Van-der Pol oscillators. <i>Computer Methods and Programs in Biomedicine</i> , <b>2013</b> , 112, 490-507	6.9	29
80	On the Detection of Myocardial Scar Based on ECG/VCG Analysis. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2013</b> , 60, 3399-409	5	27
79	Detecting Elementary Arm Movements by Tracking Upper Limb Joint Angles With MARG Sensors. <i>IEEE Journal of Biomedical and Health Informatics</i> , <b>2016</b> , 20, 1088-99	7.2	26
78	Forward and inverse modelling approaches for prediction of light stimulus from electrophysiological response in plants. <i>Measurement: Journal of the International Measurement Confederation</i> , <b>2014</b> , 53, 101-116	4.6	26

77	On the single-chip implementation of a Hiperlan/2 and IEEE 802.11a capable modem. <i>IEEE Personal Communications</i> , <b>2001</b> , 8, 48-57		26
76	An automated algorithm for online detection of fragmented QRS and identification of its various morphologies. <i>Journal of the Royal Society Interface</i> , <b>2013</b> , 10, 20130761	4.1	25
75	Coordinate Rotation Based Low Complexity N-D FastICA Algorithm and Architecture. <i>IEEE Transactions on Signal Processing</i> , <b>2011</b> , 59, 3997-4011	4.8	24
74	GOLIAH: A Gaming Platform for Home-Based Intervention in Autism - Principles and Design. <i>Frontiers in Psychiatry</i> , <b>2016</b> , 7, 70	5	24
73	Brain connectivity analysis from EEG signals using stable phase-synchronized states during face perception tasks. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2015</b> , 434, 273-295	3.3	23
72	Development of an automated updated Selvester QRS scoring system using SWT-based QRS fractionation detection and classification. <i>IEEE Journal of Biomedical and Health Informatics</i> , <b>2014</b> , 18, 193-204	7.2	23
71	Design of a Low-Power On-Body ECG Classifier for Remote Cardiovascular Monitoring Systems. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , <b>2013</b> , 3, 75-85	5.2	21
70	Low-Power VLSI Implementation of the Inner Receiver for OFDM-Based WLAN Systems. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , <b>2008</b> , 55, 672-686	3.9	21
69	Memory Reduction Methodology for Distributed-Arithmetic-Based DWT/IDWT Exploiting Data Symmetry. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , <b>2009</b> , 56, 285-289	3.5	20
68	Multimodal Functional and Structural Brain Connectivity Analysis in Autism: A Preliminary Integrated Approach With EEG, fMRI, and DTI. <i>IEEE Transactions on Cognitive and Developmental Systems</i> , <b>2018</b> , 10, 213-226	3	19
67	Efficient Inner Receiver Design for OFDM-Based WLAN Systems: Algorithm and Architecture. <i>IEEE Transactions on Wireless Communications</i> , <b>2007</b> , 6, 1374-1385	9.6	18
66	An Automatic R and T Peak Detection Method Based on the Combination of Hierarchical Clustering and Discrete Wavelet Transform. <i>IEEE Journal of Biomedical and Health Informatics</i> , <b>2020</b> , 24, 2825-2832	7.2	17
65	Recognition of elementary arm movements using orientation of a tri-axial accelerometer located near the wrist. <i>Physiological Measurement</i> , <b>2014</b> , 35, 1751-68	2.9	16
64	Low-complexity hardware design methodology for reliable and automated removal of ocular and muscular artifact from EEG. <i>Computer Methods and Programs in Biomedicine</i> , <b>2018</b> , 158, 123-133	6.9	15
63	Prompt and accurate diagnosis of ventricular arrhythmias with a novel index based on phase space reconstruction of ECG. <i>International Journal of Cardiology</i> , <b>2015</b> , 182, 38-43	3.2	14
62	Towards the development of next-generation remote healthcare system: Some practical considerations <b>2012</b> ,		14
61	GOLIAH (Gaming Open Library for Intervention in Autism at Home): a 6-month single blind matched controlled exploratory study. <i>Child and Adolescent Psychiatry and Mental Health</i> , <b>2017</b> , 11, 17	6.8	12
60	A statistical index for early diagnosis of ventricular arrhythmia from the trend analysis of ECG phase-portraits. <i>Physiological Measurement</i> , <b>2015</b> , 36, 107-31	2.9	11

59	Comparison of decision tree based classification strategies to detect external chemical stimuli from raw and filtered plant electrical response. <i>Sensors and Actuators B: Chemical</i> , <b>2017</b> , 249, 278-295	8.5	10
58	Existence of millisecond-order stable states in time-varying phase synchronization measure in EEG signals. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2013</b> , 2013, 2539-42	0.9	10
57	On the existence of synchrostates in multichannel EEG signals during face-perception tasks. <i>Biomedical Physics and Engineering Express</i> , <b>2015</b> , 1, 015002	1.5	9
56	Artifact reduction in multichannel pervasive EEG using hybrid WPT-ICA and WPT-EMD signal decomposition techniques <b>2014</b> ,		9
55	Algorithm and Architecture for N-D Vector Cross-Product Computation. <i>IEEE Transactions on Signal Processing</i> , <b>2011</b> , 59, 812-826	4.8	9
54	Using brain connectivity measure of EEG synchrostates for discriminating typical and Autism Spectrum Disorder <b>2013</b> ,		8
53	Hardware reduction methodology for 2-dimensional kurtotic fastica based on algorithmic analysis and architectural symmetry <b>2009</b> ,		8
52	A novel approach for the diagnosis of ventricular tachycardia based on phase space reconstruction of ECG. <i>International Journal of Cardiology</i> , <b>2014</b> , 172, e31-3	3.2	7
51	On the data analysis for classification of elementary upper limb movements. <i>Biomedical Engineering Letters</i> , <b>2014</b> , 4, 403-413	3.6	7
50	Robust channel identification scheme: solving permutation indeterminacy of ICA for artifacts removal from ECG. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2010</b> , 2010, 1142-5	0.9	7
49	Analog MIMO detection on the basis of Belief Propagation <b>2006</b> ,		7
48	Coordinate Rotation-Based Low Complexity $\mathcal{K}$ -Means Clustering Architecture. <i>IEEE Transactions on Very Large Scale Integration (VLSI) Systems</i> , <b>2017</b> , 25, 1568-1572	2.6	6
47	Low-Complexity Framework for Movement Classification Using Body-Worn Sensors. <i>IEEE Transactions on Very Large Scale Integration (VLSI) Systems</i> , <b>2017</b> , 25, 1537-1548	2.6	6
46	A CORDIC-Based Low-Power Statistical Feature Computation Engine for WSN Applications. <i>Circuits, Systems, and Signal Processing</i> , <b>2015</b> , 34, 4011-4028	2.2	6
45	Prediction of Synchrostate Transitions in EEG Signals Using Markov Chain Models. <i>IEEE Signal Processing Letters</i> , <b>2015</b> , 22, 149-152	3.2	6
44	On the VLSI Implementation of Adaptive-Frequency Hopf Oscillator. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , <b>2011</b> , 58, 1076-1088	3.9	6
43	Classifying human emotional states using wireless EEG based ERP and functional connectivity measures <b>2016</b> ,		6
42	Architecture for complex network measures of brain connectivity <b>2017</b> ,		5

41	Real-time arm movement recognition using FPGA <b>2015</b> ,		5
40	Dynamical System Approach for Edge Detection Using Coupled FitzHugh-Nagumo Neurons. <i>IEEE Transactions on Image Processing</i> , <b>2015</b> , 24, 5206-19	8.7	5
39	Drift removal in plant electrical signals via IIR filtering using wavelet energy. <i>Computers and Electronics in Agriculture</i> , <b>2015</b> , 118, 15-23	6.5	5
38	Co-ordinate rotation based low complexity 2D FastICA algorithm and architecture <b>2010</b> ,		5
37	Prediction and classification of ventricular arrhythmia based on phase-space reconstruction and fuzzy c-means clustering.. <i>Computers in Biology and Medicine</i> , <b>2021</b> , 142, 105180	7	5
36	Phase Space Reconstruction Based CVD Classifier Using Localized Features. <i>Scientific Reports</i> , <b>2019</b> , 9, 14593	4.9	4
35	Reduced Z-datapath Cordic Rotator <b>2008</b> ,		4
34	Fast approximate Bayesian computation for estimating parameters in differential equations. <i>Statistics and Computing</i> , <b>2017</b> , 27, 19-38	1.8	3
33	Robust and accurate personalised reconstruction of standard 12-lead system from Frank vectorcardiographic system. <i>Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization</i> , <b>2016</b> , 4, 183-192	0.9	3
32	On the sensor choice and data analysis for classification of elementary upper limb movements <b>2014</b> ,		3
31	Control strategy for anaesthetic drug dosage with interaction among human physiological organs using optimal fractional order PID controller <b>2014</b> ,		3
30	Effects of CNT diameter variability on a CNFET-based SRAM <b>2010</b> ,		3
29	Hardware efficient fixed-point VLSI architecture for 2D Kurtotic FastICA <b>2009</b> ,		3
28	A novel analogue circuit for controlling prosthetic hands <b>2008</b> ,		3
27	Classification of Autism Spectrum Disorder From EEG-Based Functional Brain Connectivity Analysis. <i>Neural Computation</i> , <b>2021</b> , 33, 1914-1941	2.9	3
26	Body Area Sensing Networks for Remote Health Monitoring <b>2016</b> , 85-136		2
25	CORDIC Framework for Quaternion-based Joint Angle Computation to Classify Arm Movements <b>2018</b> ,		2
24	Recognition of Elementary Upper Limb Movements in an Activity of Daily Living Using Data from Wrist Mounted Accelerometers <b>2014</b> ,		2

23	ECG compression for remote healthcare systems using selective thresholding based on energy compaction <b>2012</b> ,		2
22	Detection of myocardial scar from the VCG using a supervised learning approach. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2013</b> , 2013, 7326-9	0.9	2
21	Design metrics for RTL level estimation of delay variability due to intradie (random) variations <b>2010</b> ,		2
20	Physical realizable circuit structure for adaptive frequency Hopf oscillator <b>2009</b> ,		2
19	A new analytical model for predicting SWCNT band-gap from geometrical properties <b>2008</b> ,		2
18	Analysing wireless EEG based functional connectivity measures with respect to change in environmental factors <b>2016</b> ,		2
17	An effective PSR-based arrhythmia classifier using self-similarity analysis. <i>Biomedical Signal Processing and Control</i> , <b>2021</b> , 69, 102851	4.9	2
16	CORDIC Circuits <b>2017</b> , 149-185		1
15	Simplified logic design methodology for fuzzy membership function based robust detection of maternal modulus maxima location: A low complexity Fetal ECG extraction architecture for mobile health monitoring systems <b>2011</b> ,		1
14	A low-power simplified-MEWS scoring device for patient monitoring <b>2010</b> ,		1
13	Hardware development for pervasive healthcare systems: Current status and future directions <b>2008</b> ,		1
12	Cognitive Outcome Prediction in Infants With Neonatal Hypoxic-Ischemic Encephalopathy Based on Functional Connectivity and Complexity of the Electroencephalography Signal.. <i>Frontiers in Human Neuroscience</i> , <b>2021</b> , 15, 795006	3.3	1
11	Prediction of Cerebral Palsy in Newborns With Hypoxic-Ischemic Encephalopathy Using Multivariate EEG Analysis and Machine Learning. <i>IEEE Access</i> , <b>2021</b> , 9, 137833-137846	3.5	1
10	Linear and nonlinear analysis of intrinsic mode function after facial stimuli presentation in children with autism spectrum disorder. <i>Computers in Biology and Medicine</i> , <b>2021</b> , 133, 104376	7	1
9	An Automatic R-peak Detection Method Based on Hierarchical Clustering <b>2019</b> ,		1
8	Hardware architecture for real-time EEG-based functional brain connectivity parameter extraction. <i>Journal of Neural Engineering</i> , <b>2020</b> ,	5	1
7	An Investigation into the Accuracy of Calculating upper Body Joint Angles Using MARG Sensors. <i>Procedia Engineering</i> , <b>2014</b> , 87, 1330-1333		
6	Machine Learning Techniques for Remote Healthcare <b>2014</b> , 129-172		

5 Energy Harvesting for Bio-sensing by Using Carbon Nanotubes **2011**, 195-216

4 Developing a Framework for Studying Brain Networks in Neonatal Hypoxic-Ischemic Encephalopathy. *Communications in Computer and Information Science*, **2018**, 203-216 0.3

3 A phase lag index hardware calculation for real-time electroencephalography studies. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2019**, 2019, 644-647 0.9

2 Low-Complex and Low-Power n-dimensional Gram-Schmidt Orthogonalization Architecture Design Methodology. *Circuits, Systems, and Signal Processing*, 1 2.2

1 A new algorithm to reduce T-wave over-sensing based on phase space reconstruction in S-ICD system. *Computers in Biology and Medicine*, **2021**, 137, 104804 7