Amit Acharyya

List of Publications by Year
in descending order

134 papers	1,759 citations	393982 19 h-index	360668 35 g-index
137 all docs	137 docs citations	137 times ranked	1694 citing authors

#	Article	IF	Citations
1	CorNET: Deep Learning Framework for PPG-Based Heart Rate Estimation and Biometric Identification in Ambulant Environment. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 282-291.	2.7	188
2	A Low-Complexity ECG Feature Extraction Algorithm for Mobile Healthcare Applications. IEEE Journal of Biomedical and Health Informatics, 2013, 17, 459-469.	3.9	143
3	PP-Net: A Deep Learning Framework for PPG-Based Blood Pressure and Heart Rate Estimation. IEEE Sensors Journal, 2020, 20, 10000-10011.	2.4	109
4	Rehab-Net: Deep Learning Framework for Arm Movement Classification Using Wearable Sensors for Stroke Rehabilitation. IEEE Transactions on Biomedical Engineering, 2019, 66, 3026-3037.	2.5	99
5	CNN based approach for activity recognition using a wrist-worn accelerometer. , 2017, 2017, 2438-2441.		85
6	Principal Component Analysis Applied to Surface Electromyography: A Comprehensive Review. IEEE Access, 2016, 4, 4025-4037.	2.6	58
7	An ICA-EBM-Based sEMG Classifier for Recognizing Lower Limb Movements in Individuals With and Without Knee Pathology. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 675-686.	2.7	55
8	MyoNet: A Transfer-Learning-Based LRCN for Lower Limb Movement Recognition and Knee Joint Angle Prediction for Remote Monitoring of Rehabilitation Progress From sEMG. IEEE Journal of Translational Engineering in Health and Medicine, 2020, 8, 1-10.	2.2	55
9	BiometricNet: Deep Learning based Biometric Identification using Wrist-Worn PPG. , 2018, , .		41
10	Adaptive rule engine based IoT enabled remote health care data acquisition and smart transmission system. , 2014, , .		39
11	Locomo-Net: A Low -Complex Deep Learning Framework for sEMG-Based Hand Movement Recognition for Prosthetic Control. IEEE Journal of Translational Engineering in Health and Medicine, 2020, 8, 1-12.	2.2	38
12	PUF-Based Secure Chaotic Random Number Generator Design Methodology. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2020, 28, 1740-1744.	2.1	34
13	An automated algorithm for online detection of fragmented QRS and identification of its various morphologies. Journal of the Royal Society Interface, 2013, 10, 20130761.	1.5	33
14	Online and automated reliable system design to remove blink and muscle artefact in EEG. , 2015, 2015, 6784-7.		33
15	Coordinate Rotation Based Low Complexity N-D FastICA Algorithm and Architecture. IEEE Transactions on Signal Processing, 2011, 59, 3997-4011.	3.2	31
16	On the aberration-retardation effects in pulsars. Monthly Notices of the Royal Astronomical Society, 2009, 393, 1617-1624.	1.6	28
17	Development of an Automated Updated Selvester QRS Scoring System Using SWT-Based QRS Fractionation Detection and Classification. IEEE Journal of Biomedical and Health Informatics, 2014, 18, 193-204.	3.9	27
18	Memory Reduction Methodology for Distributed-Arithmetic-Based DWT/IDWT Exploiting Data Symmetry. IEEE Transactions on Circuits and Systems II: Express Briefs, 2009, 56, 285-289.	2.2	26

#	Article	IF	Citations
19	Low Power Personalized ECG Based System Design Methodology for Remote Cardiac Health Monitoring. IEEE Access, 2016, 4, 8407-8417.	2.6	25
20	Frank vectorcardiographic system from standard 12 lead ECG: An effort to enhance cardiovascular diagnosis. Journal of Electrocardiology, 2016, 49, 231-242.	0.4	25
21	Temperature and Size Effect on the Electrical Properties of Monolayer Graphene based Interconnects for Next Generation MQCA based Nanoelectronics. Scientific Reports, 2020, 10, 6240.	1.6	23
22	K-nearest neighbor based methodology for accurate diagnosis of diabetes mellitus. , 2016, , .		22
23	A Cost-Effective Fault Tolerance Technique for Functional TSV in 3-D ICs. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2017, 25, 2071-2080.	2.1	20
24	Low-complexity hardware design methodology for reliable and automated removal of ocular and muscular artifact from EEG. Computer Methods and Programs in Biomedicine, 2018, 158, 123-133.	2.6	20
25	Classification of finger extension and flexion of EMG and Cyberglove data with modified ICA weight matrix. , 2014, 2014, 3829-32.		19
26	Self-healing phenomena of graphene: potential and applications. Open Physics, 2016, 14, 364-370.	0.8	17
27	Low-Complexity Methodology for Complex Square-Root Computation. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2017, 25, 3255-3259.	2.1	15
28	Shape and Positional Anisotropy Based Area Efficient Magnetic Quantum-Dot Cellular Automata Design Methodology for Full Adder Implementation. IEEE Nanotechnology Magazine, 2018, 17, 1303-1307.	1.1	15
29	Tunable intrinsic magnetic phase transition in pristine single-layer graphene nanoribbons. Nanotechnology, 2018, 29, 455701.	1.3	14
30	Simplex FastICA: An Accelerated and Low Complex Architecture Design Methodology for n D FastICA. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 1124-1137.	2.1	14
31	Deep neural network for automated simultaneous intervertebral disc (IVDs) identification and segmentation of multi-modal MR images. Computer Methods and Programs in Biomedicine, 2021, 205, 106074.	2.6	14
32	Phase Space Reconstruction Based CVD Classifier Using Localized Features. Scientific Reports, 2019, 9, 14593.	1.6	13
33	Coordinate Rotation-Based Design Methodology for Square Root and Division Computation. IEEE Transactions on Circuits and Systems II: Express Briefs, 2019, 66, 1227-1231.	2.2	13
34	Accurate and reliable 3-lead to 12-lead ECG reconstruction methodology for remote health monitoring applications. , 2013, , .		12
35	Graphene heals thy cracks. Computational Materials Science, 2015, 109, 84-89.	1.4	12
36	Modified distributed arithmetic based low complexity CNN architecture design methodology. , 2017, , .		12

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37	A Data Driven Empirical Iterative Algorithm for GSR Signal Pre-Processing. , 2018, , .		12
38	Low Complexity Generic VLSI Architecture Design Methodology for N^{th} Root and N^{th} Power Computations. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 4673-4686.	3.5	12
39	Nanomagnetic logic design approach for area and speed efficient adder using ferromagnetically coupled fixed input majority gate. Nanotechnology, 2019, 30, 37LT02.	1.3	12
40	A Reconfigurable High Speed Architecture Design for Discrete Hilbert Transform. IEEE Signal Processing Letters, 2014, 21, 1413-1417.	2.1	11
41	Modified Huffman based compression methodology for Deep Neural Network Implementation on Resource Constrained Mobile Platforms. , 2018, , .		11
42	Algorithm and Architecture for N-D Vector Cross-Product Computation. IEEE Transactions on Signal Processing, 2011, 59, 812-826.	3.2	10
43	Coordinate Rotation-Based Low Complexity K -Means Clustering Architecture. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2017, 25, 1568-1572.	2.1	10
44	Dipole coupled magnetic quantum-dot cellular automata-based efficient approximate nanomagnetic subtractor and adder design approach. Nanotechnology, 2020, 31, 025202.	1.3	10
45	Hardware reduction methodology for 2-dimensional kurtotic fastica based on algorithmic analysis and architectural symmetry. , 2009, , .		9
46	Robust channel identification scheme: Solving permutation indeterminacy of ICA for artifacts removal from ECG. , 2010, 2010, 1142-5.		9
47	Reduced lead system selection methodology for reliable standard 12-lead reconstruction targeting personalised remote health monitoring applications. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2014, 2, 107-120.	1.3	9
48	System Architecture for Low-Power Ubiquitously Connected Remote Health Monitoring Applications With Smart Transmission Mechanism. IEEE Sensors Journal, 2015, 15, 4532-4543.	2.4	9
49	Self healing nature of bilayer graphene. Superlattices and Microstructures, 2016, 96, 26-35.	1.4	9
50	Synergistic effect of temperature and point defect on the mechanical properties of single layer and bi-layer graphene. Superlattices and Microstructures, 2017, 110, 205-214.	1.4	9
51	Low Complexity Single Channel ICA Architecture Design Methodology for Pervasive Healthcare Applications. , 2016, , .		8
52	Nanomagnetic logic based runtime Reconfigurable area efficient and high speed adder design methodology. Nanotechnology, 2020, 31, 18LT02.	1.3	8
53	Co-ordinate rotation based low complexity 2D FastICA algorithm and architecture. , 2010, , .		7
54	Configurable Rotation Matrix of Hyperbolic CORDIC for Any Logarithm and Its Inverse computation. Circuits, Systems, and Signal Processing, 2020, 39, 2551-2573.	1.2	7

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55	Context predictor based sparse sensing technique and smart transmission architecture for IoT enabled remote health monitoring applications. , 2014, 2014, 4151-4.		6
56	Shape-memory-alloy-based smart knee spacer for total knee arthroplasty: 3D CAD modelling and a computational study. Medical Engineering and Physics, 2018, 55, 43-51.	0.8	6
57	Methodology for automated detection of fragmentation in QRS complex of Standard 12-lead ECG. , 2013, 2013, 3789-92.		5
58	Robust and accurate personalised reconstruction of standard 12-lead system from Frank vectorcardiographic system. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2016, 4, 183-192.	1.3	5
59	Low complexity hardware accelerator for nD FastICA based on coordinate rotation. , 2017, , .		5
60	High-Speed Low-Complexity Guided Image Filtering-Based Disparity Estimation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 606-617.	3.5	5
61	Hardware-Software Codesign based Accelerated and Reconfigurable Methodology for String Matching in Computational Bioinformatics Applications. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2019, 17, 1-1.	1.9	5
62	A Cost-Aware Framework for Lifetime Reliability of TSV-Based 3D-IC Design. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 2677-2681.	2.2	5
63	Hardware efficient fixed-point VLSI architecture for 2D Kurtotic FastICA. , 2009, , .		4
64	Low complexity underdetermined blind source separation system architecture for emerging remote healthcare applications. , 2014, 2014, 3833-6.		4
65	Affordable low complexity heart/brain monitoring methodology for remote health care. , 2015, 2015, 5082-5.		4
66	An accurate clustering algorithm for fast protein-profiling using SCICA on MALDI-TOF. , 2015, , .		4
67	CardioNet: Deep Learning Framework for Prediction of CVD Risk Factors. , 2020, , .		4
68	Low-Complexity and High-Speed Architecture Design Methodology for Complex Square Root. Circuits, Systems, and Signal Processing, 2021, 40, 5759-5772.	1.2	4
69	A novel and reliable interlayer exchange coupled nanomagnetic universal logic gate design. Nanotechnology, 2021, 32, 095205.	1.3	4
70	A Novel Single Lead to 12-Lead ECG Reconstruction Methodology Using Convolutional Neural Networks and LSTM. , 2022, , .		4
71	A new VLSI IC design automation methodology with reduced NRE costs and time-to-market using the NPN class Representation and functional symmetry. , 2014, , .		3
72	A 1.5mA, 2.4GHz ZigBee/BLE QLMVF Receiver Frond End with Split TCAs in 180nm CMOS. , 2016, , .		3

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73	Coordinate rotation and vector cross product based hardware accelerator for nD FastICA. , 2017, , .		3
74	Vector Cross Product and Coordinate Rotation Based <i>n</i>D Hybrid FastICA. Journal of Low Power Electronics, 2018, 14, 351-364.	0.6	3
75	CORAL: Verification-aware OpenCL based Read Mapper for Heterogeneous Systems. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2019, 18, 1-1.	1.9	3
76	Tunable polarization components and electric field induced crystallization in polyvinylidenefluoride: A piezo polymer. Polymer Crystallization, 2019, 2, e10027.	0.5	3
77	Low-Complexity Architecture for Cyber-Physical Systems Model Identification. IEEE Transactions on Circuits and Systems II: Express Briefs, 2019, 66, 1416-1420.	2.2	3
78	M2DA: A Low-Complex Design Methodology for Convolutional Neural Network Exploiting Data Symmetry and Redundancy. Circuits, Systems, and Signal Processing, 2021, 40, 1542-1567.	1.2	3
79	Area efficient in-plane nanomagnetic multiplier and convolution architecture design. Nano Express, 2021, 2, 020008.	1.2	3
80	Single Channel Blind Source Separation Using Dual Extended Kalman Filter. , 2021, , .		3
81	Classification Methodology of CVD with Localized Features Analysis Using Phase Space Reconstruction Targeting Personalized Remote Health Monitoring. , 0, , .		3
82	Phase Space Reconstruction Based Real Time Fatigue Crack Growth Estimation for Structural Health Monitoring Ships. , 2022, , .		3
83	Coordinate rotation based low complexity architecture for 3D Single Channel Independent Component Analysis. , 2013, 2013, 7322-5.		2
84	A Novel and Unified Digital IC Design and Automation Methodology with Reduced NRE Cost and Time-to-Market. , 2013, , .		2
85	A Low-Complexity Onchip Real-Time Automated ECG Frame Identification Methodology Targeting Remote Health Care. , 2014, , .		2
86	A low complexity on-chip ECG data compression methodology targeting remote health-care applications. , 2014, 2014, 5944-7.		2
87	Multiscale PCA to distinguish regular and irregular surfaces using tri axial head and trunk acceleration signals. , 2015, 2015, 4122-5.		2
88	Fast underdetermined BSS architecture design methodology for real time applications. , 2015, 2015, 5408-11.		2
89	Runtime Performance and Power Optimization of Parallel Disparity Estimation on Many-Core Platforms. Transactions on Embedded Computing Systems, 2018, 17, 1-19.	2.1	2
90	Discrete wavelet transform based methodology for radar pulse deinterleaving. CSI Transactions on ICT, 2019, 7, 141-147.	0.7	2

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91	A Framework for TSV Based 3D-IC to Analyze Aging and TSV Thermo-Mechanical Stress on Soft Errors. , 2019, , .		2
92	A High Speed and Low Complexity Architecture Design Methodology for Square Root Unscented Kalman Filter based SLAM. , 2020, , .		2
93	Personalized subcutaneous implantable cardioverter-defibrillator sensing vectors generated by mathematical rotation increase device eligibility whilst preserving device performance. Europace, 2022, 24, 1267-1275.	0.7	2
94	Hardware development for pervasive healthcare systems: Current status and future directions. , 2008, , .		1
95	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. , 2011, , .		1
96	A new CAVLC algorithm for higher bit compression by introducing the concept of Position Coding of the coefficients in H.264/AVC. , 2012, , .		1
97	Energy-Efficient and High-Speed Robust Channel Identification Methodology to Solve Permutation Indeterminacy in ICA for Artifacts Removal from ECG in Remote Healthcare. , 2013, , .		1
98	A Novel Physical Synthesis Methodology in the VLSI Design Automation by Introducing Dynamic Library Concept. , 2013, , .		1
99	A Low Complexity Architecture for Online On-chip Detection and Identification of f-QRS Feature for Remote Personalized Health Care Applications. , 2014, , .		1
100	System Architecture for Smart Ubiquitous Health Monitoring System with Area Optimization in Multiple On-chip Radios Scenario. , 2014, , .		1
101	1.2 mW 2.4 GHz PLL for ZigBee and BLE standard in single-well 0.18 µm CMOS with efficient divider architecture. , 2015, , .		1
102	Design and implementation of an adaptive learning system: An MSc project experience. , 2016, , .		1
103	Accelerated reconfigurable string matching using hardware-software codesign for computational bioinformatics applications. , 2017, , .		1
104	Low-Complexity and Reconfigurable Discrete Hilbert Transform Architecture Design Methodology. Journal of Low Power Electronics, 2018, 14, 327-336.	0.6	1
105	Discrete wavelet transform based unsupervised underdetermined blind source separation methodology for radar pulse deinterleaving using antenna scan pattern. IET Radar, Sonar and Navigation, 2019, 13, 1350-1358.	0.9	1
106	Flange Effect Minimization and Antenna Isolation Improvement Using RF Choke in Slotted Waveguide Array Antenna. , 2019, , .		1
107	Secure Scan Design with a Novel Methodology of Scan Camouflaging. , 2020, , .		1
108	An FPGA based Energy-Efficient Read Mapper with Parallel Filtering and in-situ Verification. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2021, PP, 1-1.	1.9	1

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109	IC Age Estimation Methodology Using IO Pad Protection Diodes for Prevention of Recycled ICs. , 2021, , .		1
110	Effects of Orientation and Temperature on the Tensile Strength of Pristine and Defective Bi-Layer Graphene Sheet â€" A Molecular Dynamics Study. Transactions of the Indian Institute of Metals, 2021, 74, 1729-1739.	0.7	1
111	Interlayer exchange couple based reliable and robust 3-input adder design methodology. Nanotechnology, 2021, 32, 325201.	1.3	1
112	Low-Complex and Low-Power n-dimensional Gramâ€"Schmidt Orthogonalization Architecture Design Methodology. Circuits, Systems, and Signal Processing, 0, , 1.	1.2	1
113	Interlayer Exchange Coupled based Nanomagnetic Multiplier Architecture Design Methodology. IEEE Nanotechnology Magazine, 2021, , 1-1.	1.1	1
114	Power and Area-Efficient Architectural Design Methodology for Nanomagnetic Computation. Engergy Systems in Electrical Engineering, 2020, , 241-270.	0.5	1
115	Thermo-Magnetic Control System for Nano-Ferromagnetic Particle Doped Shape Memory Alloy for Orthopedic Devices and Rehabilitation Techniques. Journal of Low Power Electronics, 2017, 13, 678-686.	0.6	1
116	Signal Processing Architecture Implementation Methodologies for Next-Generation Remote Healthcare Systems. , 2014, , 93-128.		1
117	A Novel Integrated Circuit Design Methodology Using Dynamic Library Concept with Reduced Non-Recurring Engineering Cost and Time-to-Market. Journal of Low Power Electronics, 2014, 10, 429-442.	0.6	1
118	A Robust Reliable and Low Complexity on Chip f-QRS Detection and Identification Architecture for Remote Personalized Health Care Applications. Journal of Low Power Electronics, 2015, 11, 387-400.	0.6	1
119	An Accelerated Computational Approach in Proteomics. Series in Bioengineering, 2020, , 389-432.	0.3	1
120	VLSI Architecture Design Methodology for Deep learning based Upper Limb and Lower Limb Movement Classification for Rehabilitation Application. , 2022, , .		1
121	A low-cost scalable solution for digitizing analog X-rays with applications to rural healthcare. , 2013, 2013, 7496-9.		0
122	A New Dynamic Library Based IC Design Automation Methodology Using Functional Symmetry with NPN Class Representation Approach to Reduce NRE Costs and Time-to-Market. , 2014, , .		0
123	Effect of Constant One and Zero, Shared and Non-decomposed Nodes on Runtime and Graph Size of the Shannon Factor Graph (SFG). , 2014, , .		0
124	0.8 V 450 Î¼W 2.4 GHz PLL using back-gate QVCO for ZigBee/BLE standard in 0.18 Î¼m CMOS. , 2016, , .		0
125	Thermo-magnetic shape control of nano-ferromagnetic particle doped shape memory alloy for orthopedic devices and rehabilitation techniques. , 2016, , .		0
126	Study of Stiffness and flexible sensing performance of poly-vinylidene fluoride (PVDF) a piezo polymer with varying polarization components. , 2019, , .		0

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127	Fault Tolerance in 3D-ICs. Internet of Things, 2019, , 155-178.	1.3	0
128	PLEDGER: Embedded Whole Genome Read Mapping using Algorithm-HW Co-design and Memory-aware Implementation. , 2021, , .		0
129	ECG Lead Reconstruction Methodologies for Remote Health Monitoring of Cardiovascular Diseases (CVD). , 2022, , 3-59.		0
130	Energy-Efficient and High-Speed Robust System Design for Remote Cardiac Health Monitoring. Journal of Low Power Electronics, 2014, 10, 519-530.	0.6	0
131	Pervasive Computing in Cardiovascular Healthcare. , 2019, , 177-211.		0
132	Low Complexity VLSI Architecture Design Methodology for Wigner Ville Distribution. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 3532-3536.	2.2	0
133	A Hierarchical Fault-Tolerant and Cost Effective Framework for RRAM Based Neural Computing Systems. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 684-688.	2.2	0
134	Fragmented Huffman-Based Compression Methodology for CNN Targeting Resource-Constrained Edge Devices. Circuits, Systems, and Signal Processing, 0, , 1.	1.2	0