

The principles of software QRS detection

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Citation Report

#	ARTICLE	IF	CITATIONS
2	On Adaptive Robust Control and Control-Relevant System Identification. , 1992, , .		35
4	Low frequency noise in AlInAs/InGaAs/InP HFETs. , 0, , .		0
5	Automatic detection algorithm for physiologic pressure signal components. , 0, , .		16
6	R-wave detection for pacemakers using a matched filter based on an artificial neural network. , 0, , .		3
7	A wavelet-based method for action potential detection from extracellular neural signal recording with low signal-to-noise ratio. IEEE Transactions on Biomedical Engineering, 2003, 50, 999-1011.	2.5	137
8	Clustering of electrocardiograph signals in computer-aided Holter analysis. Computer Methods and Programs in Biomedicine, 2003, 72, 179-196.	2.6	44
9	Study of Unipolar Electrogram Morphology in a Computer Model of Atrial Fibrillation. Journal of Cardiovascular Electrophysiology, 2003, 14, S172-S179.	0.8	111
10	A robust open-source algorithm to detect onset and duration of QRS complexes. , 2003, , .		113
11	A moving average based filtering system with its application to real-time QRS detection. , 2003, , .		72
12	QRS detector pre-processing using the complex wavelet transform. , 0, , .		12
13	R-wave detection using continuous wavelet modulus maxima. , 2003, , .		36
14	Analog wavelet transform employing dynamic translinear circuits for cardiac signal characterization. , 0, , .		30
15	Adaptive comb filters for quasiperiodic physiologic signals. , 0, , .		4
16	Biosignal laboratory: a software tool for biomedical signal processing and analysis. , 0, , .		2
17	Interpolation technique for extracting features from ECG signals sampled at low sampling rates. , 2003, , .		5
18	Development of a real-time QRS beat classifier using a nonlinear trimmed moving averaging-based system. , 2003, , .		3
19	A new resource for independent and blinded assessment of QRS detection algorithms. , 0, , .		0
20	Nonlinear processing and analysis of ECG data. Technology and Health Care, 2004, 12, 1-9.	0.5	5

#	ARTICLE	IF	CITATIONS
22	Motion compensation for interventional navigation on 3D static roadmaps based on an affine model and gating. <i>Physics in Medicine and Biology</i> , 2004, 49, 719-732.	1.6	21
23	A high performance compression algorithm for ECG with irregular periods. , 0, , .		3
24	Surveillance and control of the yarn input tension on circular weft knitting machines: new approaches. , 0, , .		0
25	Registration of Real-Time 3-D Ultrasound Images of the Heart for Novel 3-D Stress Echocardiography. <i>IEEE Transactions on Medical Imaging</i> , 2004, 23, 1141-1149.	5.4	46
26	Evaluation of the performance of a QRS detector for extracting the heart interbeat RR time series from fetal magnetocardiography. , 2004, 2006, 369-72.		2
27	A wavelet based R-wave detector for cardiac pacemakers in 0.35 CMOS technology. , 0, , .		3
28	A Wavelet-Based ECG Delineator: Evaluation on Standard Databases. <i>IEEE Transactions on Biomedical Engineering</i> , 2004, 51, 570-581.	2.5	1,216
29	Real-time interactive volumetric animation of the heart's electrical cycle from automatically synchronized ECG. <i>Computer Animation and Virtual Worlds</i> , 2004, 15, 353-360.	0.7	3
30	Towards the integration of textile sensors in a wireless monitoring suit. <i>Sensors and Actuators A: Physical</i> , 2004, 114, 302-311.	2.0	267
31	Continuous noninvasive blood pressure measurement by pulse transit time. , 2004, 2006, 738-41.		91
32	A new system for monitoring and analysis of the knitting process. , 0, , .		2
33	Hybrid processing and time-frequency analysis of ECG signal. , 2004, 2006, 361-4.		0
34	R-peak detection with alternative Haar wavelet filter. , 0, , .		1
35	Ventricular beat detection in single channel electrocardiograms. <i>BioMedical Engineering OnLine</i> , 2004, 3, 3.	1.3	36
36	A QRS detection based on hilbert transform and wavelet bases. , 0, , .		10
37	Techniques for unveiling faults during, knitting, production. , 2004, , .		4
38	Suppression of Ventricular Activity in the Surface Electrocardiogram of Atrial Fibrillation. <i>Lecture Notes in Computer Science</i> , 2004, , 1095-1102.	1.0	8
39	Methodological Principles of T Wave Alternans Analysis: A Unified Framework. <i>IEEE Transactions on Biomedical Engineering</i> , 2005, 52, 599-613.	2.5	172

#	ARTICLE	IF	CITATIONS
40	An Automatic Beat Detection Algorithm for Pressure Signals. IEEE Transactions on Biomedical Engineering, 2005, 52, 1662-1670.	2.5	161
41	Evaluation of real-time QRS detection algorithms in variable contexts. Medical and Biological Engineering and Computing, 2005, 43, 379-385.	1.6	43
42	Motion compensated coronary interventional navigation by means of diaphragm tracking and elastic motion models. Physics in Medicine and Biology, 2005, 50, 491-503.	1.6	36
43	Knitting Process Surveillance Using Time and Frequency Analysis. , 2005, , .		3
44	Heartbeat Detection Using Energy Thresholding and Template Match. , 2005, 2005, 6668-70.		20
45	Robust and efficient location of T-wave ends in electrocardiogram. , 2005, , .		11
46	Development of a wearable biomedical health-care system. , 2005, , .		5
47	Wavelet Transform-Based ECG Baseline Drift Removal for Body Surface Potential Mapping. , 2005, 2005, 3891-4.		32
48	Auto Adaptive Signal Processing of a Laser Diode Self-Mixing Displacement Sensor. , 0, , .		3
49	Combining Algorithms in Automatic Detection of R-peaks in ECG Signals. , 0, , .		11
50	A VR toolkit for the diagnosis and monitoring of myocardial infarctions. Volume Graphics International Symposium on Volume Graphics, 2005, , .	2.0	0
51	Digital implementation of a wavelet-based event detector for cardiac pacemakers. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2005, 52, 2686-2698.	0.1	37
52	Fast Algorithm of Flat Sliding Detection in Flat Wheel Detecting System. , 0, , .		2
53	Wavelet transforms and the ECG: a review. Physiological Measurement, 2005, 26, R155-R199.	1.2	651
54	CONTINUOUS WAVELET TRANSFORM MODULUS MAXIMA ANALYSIS OF THE ELECTROCARDIOGRAM: BEAT CHARACTERISATION AND BEAT-TO-BEAT MEASUREMENT. International Journal of Wavelets, Multiresolution and Information Processing, 2005, 03, 19-42.	0.9	63
55	A QRS Complex Detection Algorithm Based on Mathematical Morphology and Envelope. , 2005, 2005, 4654-7.		16
56	Body Sensor Network Based Context Aware QRS Detection. , 2006, , .		3
57	A Fractional Wavelet for QRS Detection. , 0, , .		0

#	ARTICLE	IF	CITATIONS
58	A Multi-HMM Approach to ECG Segmentation. , 2006, , .		11
59	An Algorithm for Robust and Efficient Location of T-Wave Ends in Electrocardiograms. IEEE Transactions on Biomedical Engineering, 2006, 53, 2544-2552.	2.5	124
60	Frequency, time-frequency and wavelet analysis of ECG signal. , 2006, , .		5
61	A low complexity, low power, programmable QRS detector based on wavelet transform for Implantable Pacemaker IC. , 2006, , .		16
62	Automatic detection of QRS complexes in ECG signals collected from patients after cardiac surgery. , 2006, 2006, 3724-7.		6
63	ECG Signal Maxima Detection Using Wavelet Transform. , 2006, , .		11
65	A New ECG Identification Method Using Bayes' Teorem. , 2006, , .		32
67	Precision of QT Interval Measurement by Advanced Electrocardiographic Equipment. PACE - Pacing and Clinical Electrophysiology, 2006, 29, 1277-1284.	0.5	73
68	Towards real time QRS detection: A fast method using minimal pre-processing. Biomedical Signal Processing and Control, 2006, 1, 169-176.	3.5	25
69	A Method for Automatic Identification of Reliable Heart Rates Calculated from ECG and PPG Waveforms. Journal of the American Medical Informatics Association: JAMIA, 2006, 13, 309-320.	2.2	82
70	The influence of coincidence of fetal and maternal QRS complexes on fetal heart rate reliability. Medical and Biological Engineering and Computing, 2006, 44, 393-403.	1.6	42
71	A real-time QRS detection method based on moving-averaging incorporating with wavelet denoising. Computer Methods and Programs in Biomedicine, 2006, 82, 187-195.	2.6	211
72	An Effective and Efficient Compression Algorithm for ECG Signals With Irregular Periods. IEEE Transactions on Biomedical Engineering, 2006, 53, 1198-1205.	2.5	97
73	ECG signal analysis through hidden Markov models. IEEE Transactions on Biomedical Engineering, 2006, 53, 1541-1549.	2.5	234
74	Displacement Measurements Using a Self-Mixing Laser Diode Under Moderate Feedback. IEEE Transactions on Instrumentation and Measurement, 2006, 55, 1101-1105.	2.4	166
75	Combining Algorithms in Automatic Detection of QRS Complexes in ECG Signals. IEEE Transactions on Information Technology in Biomedicine, 2006, 10, 468-475.	3.6	92
76	Atrial fibrillation and waveform characterization. IEEE Engineering in Medicine and Biology Magazine, 2006, 25, 24-30.	1.1	131
77	Body Sensor Network Based Context Aware QRS Detection. , 2006, 2006, 3266-9.		12

#	ARTICLE	IF	CITATIONS
78	Cardiac Rhythm Detection and Classification by WOLA Filterbank Analysis of EGM Signals. , 2006, 2006, 1402-5.		0
79	Quantitative Analysis of QRS Detection Algorithms Based on the First Derivative of the ECG. , 2006, 2006, 1788-91.		26
80	Automated adaptive heart interbeat time extraction from long term noisy and variable ECG signals. , 2006, 2006, 5775-8.		0
81	Characterization of a self-mixing displacement sensor under moderate feedback. Optical Engineering, 2006, 45, 084402.	0.5	12
82	A Wireless Patch-type Physiological Monitoring MicroSystem. , 2006, , .		1
83	A NOVEL FRAMEWORK FOR SIGNAL REPRESENTATION AND SOURCE SEPARATION: APPLICATIONS TO FILTERING AND SEGMENTATION OF BIOSIGNALS. Journal of Biological Systems, 2006, 14, 169-183.	0.5	31
84	Automatic ECG segmentation based on Wavelet Transform Modulus Maxima. , 2006, , .		6
85	A Support System for ECG Segmentation Based on Hidden Markov Models. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 3228-31.	0.5	8
86	CHOOSING REAL-TIME PREDICTORS FOR VENTRICULAR ARRHYTHMIA DETECTION. International Journal of Pattern Recognition and Artificial Intelligence, 2007, 21, 1249-1263.	0.7	9
87	Predicting the QRS complex and detecting small changes using principal component analysis. Biomedizinische Technik, 2007, 52, 11-17.	0.9	5
88	Temporal image reconstruction in electrical impedance tomography. Physiological Measurement, 2007, 28, S1-S11.	1.2	70
89	Reducing the Effects of Electrocardiographic Artifacts on Electro-oculography in Automatic Sleep Analysis. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 590-3.	0.5	2
90	An algorithm for QRS onset and offset detection in single lead electrocardiogram records. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 541-4.	0.5	28
91	Hybrid wavelet-mathematical morphology feature extraction for heartbeat classification. , 2007, , .		7
92	An Algorithm for Phase-Space Detection of the P Characteristic Points. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 2004-7.	0.5	2
93	WAVELET-BASED BASE LINE WANDERING REMOVAL AND R PEAK AND QRS COMPLEX DETECTION. International Journal of Wavelets, Multiresolution and Information Processing, 2007, 05, 927-939.	0.9	6
94	A nonlinear trimmed moving averaging-based system with its application to real-time QRS beat classification. Journal of Medical Engineering and Technology, 2007, 31, 443-449.	0.8	5
95	Hardware Implementation of a Modified Delay-Coordinate Mapping-Based QRS Complex Detection Algorithm. Eurasip Journal on Advances in Signal Processing, 2007, 2007, .	1.0	12

#	ARTICLE	IF	CITATIONS
96	Real-Time Cardiac Arrhythmia Detection Using WOLA Filterbank Analysis of EGM Signals. Eurasip Journal on Advances in Signal Processing, 2007, 2007, .	1.0	3
97	Electrocardiogram QRS Detection Using Multiscale Filtering Based on Mathematical Morphology. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 3196-9.	0.5	27
98	An Effective QRS Detection Algorithm for Wearable ECG in Body Area Network. , 2007, , .		17
99	Study Of Individual Cardiogram Waveform Automatic Selection In loiter. , 2007, , .		0
100	A Patch-type Wireless Physiological Monitoring Microsystems. , 2007, , .		2
101	An Unbiased Linear Artificial Neural Network with Normalized Adaptive Coefficients for Filtering Noisy ECG Signals. , 2007, , .		10
102	Mathematical Morphology Based ECG Feature Extraction for the Purpose of Heartbeat Classification. , 2007, , .		41
103	Discrete Wavelet Transform In Automatic ECG Signal Analysis. Conference Record - IEEE Instrumentation and Measurement Technology Conference, 2007, , .	0.0	14
104	Baseline wander correction in pulse waveforms using wavelet-based cascaded adaptive filter. Computers in Biology and Medicine, 2007, 37, 716-731.	3.9	90
105	A new approach to QRS segmentation based on wavelet bases and adaptive threshold technique. Medical Engineering and Physics, 2007, 29, 26-37.	0.8	58
106	Development of entropy based algorithm for cardiac beat detection in 12-lead electrocardiogram. Signal Processing, 2007, 87, 3190-3201.	2.1	27
107	Body Movement Activity Recognition for Ambulatory Cardiac Monitoring. IEEE Transactions on Biomedical Engineering, 2007, 54, 874-882.	2.5	76
108	Real-Time Correction of Heart Interbeat Intervals. IEEE Transactions on Biomedical Engineering, 2007, 54, 946-950.	2.5	25
109	A Nonlinear Bayesian Filtering Framework for ECG Denoising. IEEE Transactions on Biomedical Engineering, 2007, 54, 2172-2185.	2.5	398
110	Unsupervised classification of ventricular extrasystoles using bounded clustering algorithms and morphology matching. Medical and Biological Engineering and Computing, 2007, 45, 229-239.	1.6	25
111	Development of SVM based classification techniques for the delineation of wave components in 12-lead electrocardiogram. Biomedical Signal Processing and Control, 2008, 3, 341-349.	3.5	37
112	EIT image reconstruction with four dimensional regularization. Medical and Biological Engineering and Computing, 2008, 46, 889-899.	1.6	12
113	SVM-based algorithm for recognition of QRS complexes in electrocardiogram. Irbm, 2008, 29, 310-317.	3.7	63

#	ARTICLE	IF	CITATIONS
114	An observational, prospective study exploring the use of heart rate variability as a predictor of clinical outcomes in pre-hospital ambulance patients. <i>Resuscitation</i> , 2008, 78, 289-297.	1.3	24
115	Combined entropy based method for detection of QRS complexes in 12-lead electrocardiogram using SVM. <i>Computers in Biology and Medicine</i> , 2008, 38, 138-145.	3.9	45
116	Evolving a Bayesian classifier for ECG-based age classification in medical applications. <i>Applied Soft Computing Journal</i> , 2008, 8, 599-608.	4.1	63
117	Association of cardiac autonomic function measures with severity of sleep-disordered breathing in a community-based sample. <i>Journal of Sleep Research</i> , 2008, 17, 251-262.	1.7	45
118	Model-Based Fiducial Points Extraction for Baseline Wandered Electrocardiograms. <i>IEEE Transactions on Biomedical Engineering</i> , 2008, 55, 347-351.	2.5	48
119	Automated Estimation of the Upper Surface of the Diaphragm in 3-D CT Images. <i>IEEE Transactions on Biomedical Engineering</i> , 2008, 55, 351-353.	2.5	13
120	Automatic Identification of Return of Spontaneous Circulation During Cardiopulmonary Resuscitation. <i>IEEE Transactions on Biomedical Engineering</i> , 2008, 55, 60-68.	2.5	74
121	QRS complexes detection for ECG signal: The Difference Operation Method. <i>Computer Methods and Programs in Biomedicine</i> , 2008, 91, 245-254.	2.6	221
122	A Novel Methodology for Fetal Heart Rate Extraction from the Abdominal Electrocardiogram. , 2008, , .		1
123	ECG segmentation in a body sensor network using Hidden Markov Models. <i>Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on</i> , 2008, , .	1.0	3
124	Accurate positioning for intervention on the beating heart using a crawling robot. , 2008, , .		1
125	A new fitting approach for online electrocardiogram component waves delineation. , 2008, , .		4
126	QRS Recognition with Programmable Hardware. , 2008, , .		10
127	An algorithm for robust detection of QRS onset and offset in ECG signals. , 2008, , .		16
128	Robust electrocardiogram (ECG) beat classification using discrete wavelet transform. <i>Physiological Measurement</i> , 2008, 29, 555-570.	1.2	72
129	Embedded real-time QRS detection algorithm for pervasive cardiac care system. , 2008, , .		14
130	A fast and accurate FPGA based QRS detection system. , 2008, 2008, 4828-31.		23
131	Patient classification based on pre-hospital heart rate variability. , 2008, , .		0

#	ARTICLE	IF	CITATIONS
133	An Approach Combining Wavelet Transform and Hidden Markov Models for ECG Segmentation. , 2008, , .		9
134	Analysis of First-Derivative Based QRS Detection Algorithms. IEEE Transactions on Biomedical Engineering, 2008, 55, 478-484.	2.5	345
135	ECG segmentation in a body sensor network using Hidden Markov Models. , 2008, , .		0
136	A Supervised Wavelet Transform Algorithm for R Spike Detection in Noisy ECGs. Communications in Computer and Information Science, 2008, , 256-264.	0.4	1
137	Robust heart rate estimation from multiple asynchronous noisy sources using signal quality indices and a Kalman filter. Physiological Measurement, 2008, 29, 15-32.	1.2	322
138	Ubiquitous evolvable hardware system for heart disease diagnosis applications. International Journal of Electronics, 2008, 95, 637-651.	0.9	2
139	Model-based ECG fiducial points extraction using a modified extended Kalman filter structure. , 2008, , .		4
140	Emotion-aware technologies for consumer electronics. , 2008, , .		3
141	A Robust QRS Complex Detection Algorithm Using Dynamic Thresholds. , 2008, , .		19
142	Automatic Detection of QRS Complexes using Quantum Neural Networks. , 2008, , .		3
143	Telemedicine applications in OURSES project. , 2008, , .		4
144	Comparative study of Empirical Mode Decomposition applied in experimental biosignals. , 2008, , .		5
145	Development of SVM based ECG Pattern Recognition Technique. IETE Journal of Research, 2008, 54, 5-11.	1.8	13
146	A method for accurate localization of the first heart sound and possible applications. Physiological Measurement, 2008, 29, 417-428.	1.2	28
147	A robust method for QRS detection based on modified p-spectrum. , 2008, , .		4
148	Energy Efficient Biomedical Signal Processing in Implantable Devices. Advances in Science and Technology, 0, , .	0.2	0
149	QRS COMPLEX DETECTION USING DOUBLE DENSITY DISCRETE WAVELET TRANSFORM. Biomedical Engineering - Applications, Basis and Communications, 2008, 20, 65-73.	0.3	2
150	ECG signal processing using multiresolution analysis. Journal of Medical Engineering and Technology, 2008, 32, 466-478.	0.8	5

#	ARTICLE	IF	CITATIONS
151	ECG Beats Classification Based on Ensemble Feature Composed of Independent Components and QRS Complex Width. , 2008, , .		10
152	Detection of QRS complexes in electrocardiogram using support vector machine. Journal of Medical Engineering and Technology, 2008, 32, 206-215.	0.8	13
153	SEGMENT CLASSIFICATION OF ECG DATA AND CONSTRUCTION OF SCATTER PLOTS USING PRINCIPAL COMPONENT ANALYSIS. Journal of Mechanics in Medicine and Biology, 2008, 08, 421-458.	0.3	24
154	P wave detector with PP rhythm tracking: evaluation in different arrhythmia contexts. Physiological Measurement, 2008, 29, 141-155.	1.2	35
155	An algorithm for extracting intracranial pressure latency relative to electrocardiogram R wave. Physiological Measurement, 2008, 29, 459-471.	1.2	49
156	An optimal automatic beat detection algorithm based on detector switching. , 2008, , .		0
157	How the threshold “r” influences approximate entropy analysis of heart-rate variability. , 2008, , .		47
158	Efficient QRS detection in wearable ECG devices for body sensor network. , 2008, , .		5
159	Effects of pedaling on the high frequency components of HRV during exercise. , 2008, , .		1
160	Estimation of respiratory waveform and heart rate using an accelerometer. , 2008, 2008, 4916-9.		50
161	A Real-Time QRS Detector Based on Discrete Wavelet Transform and Cubic Spline Interpolation. Telemedicine Journal and E-Health, 2008, 14, 809-815.	1.6	6
162	Measurement of QRS Duration for Biventricular Pacing Optimization. ASAIO Journal, 2008, 54, 335-340.	0.9	2
163	Analysis of changes in the beat-to-beat P-wave morphology using clustering techniques. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 5215-5220.	0.4	0
164	A low-cost universal cumulative gating circuit for small and large animal clinical imaging. Proceedings of SPIE, 2008, , .	0.8	0
165	Estimating the depth of anesthesia using fuzzy soft computation applied to EEG features. Intelligent Data Analysis, 2008, 12, 393-407.	0.4	22
166	Performance evaluation of Radial Basis Function Neural Network on ECG beat classification. , 2009, , .		3
167	Development of FCM based algorithm for the delineation of QRS-complexes in Electrocardiogram. , 2009, , .		2
168	Detecting QRS Complexes of Two-Channel ECG Signals by Using Combined Wavelet Entropy. , 2009, , .		9

#	ARTICLE	IF	CITATIONS
169	A Noise Tolerant Method for ECG Signals Feature Extraction and Noise Reduction. , 2009, , .		0
170	Information Extraction from Multimodal ECG Documents. , 2009, , .		7
171	Automated synchrogram analysis applied to heartbeat and reconstructed respiration. Chaos, 2009, 19, 015106.	1.0	23
172	Enhancement of the modified p-spectrum for use in real-time QRS complex detection. , 2009, , .		1
173	Robust beat detector for ambulatory cardiac monitoring. , 2009, 2009, 950-3.		33
174	A model-based Bayesian framework for ECG beat segmentation. Physiological Measurement, 2009, 30, 335-352.	1.2	100
175	ECG Beats Feature Extraction Based on Geometric Algebra. , 2009, , .		1
176	Motion-gated acquisition for in vivo optical imaging. Journal of Biomedical Optics, 2009, 14, 1.	1.4	18
177	Local Scale Exponents of Blood Pressure and Heart Rate Variability by Detrended Fluctuation Analysis: Effects of Posture, Exercise, and Aging. IEEE Transactions on Biomedical Engineering, 2009, 56, 675-684.	2.5	94
178	Application of support vector machine for the detection of P- and T-waves in 12-lead electrocardiogram. Computer Methods and Programs in Biomedicine, 2009, 93, 46-60.	2.6	33
179	A comparative analysis of principal component and independent component techniques for electrocardiograms. Neural Computing and Applications, 2009, 18, 539-556.	3.2	67
180	Identification of QRS complexes in 12-lead electrocardiogram. Expert Systems With Applications, 2009, 36, 820-828.	4.4	31
181	Methodology of QTâ€Interval Measurement in the Modular ECG Analysis System (MEANS). Annals of Noninvasive Electrocardiology, 2009, 14, S48-53.	0.5	15
182	Detection and delineation of P and T waves in 12â€lead electrocardiograms. Expert Systems, 2009, 26, 125-143.	2.9	23
183	MEMSWear-bimonitoring system for remote vital signs monitoring. Journal of the Franklin Institute, 2009, 346, 531-542.	1.9	46
184	Pulse onset detection using neighbor pulse-based signal enhancement. Medical Engineering and Physics, 2009, 31, 337-345.	0.8	19
185	Analysis of changes in the beat-to-beat P-wave morphology using clustering techniques. Biomedical Signal Processing and Control, 2009, 4, 309-316.	3.5	8
186	A Sequential Procedure for Individual Identity Verification Using ECG. Eurasip Journal on Advances in Signal Processing, 2009, 2009, .	1.0	44

#	ARTICLE	IF	CITATIONS
187	Threshold-free detection of maternal heart rate from abdominal electrocardiogram. , 2009, , .		5
188	Low-power robust beat detection in ambulatory cardiac monitoring. , 2009, , .		25
189	Digital fractional order operators for R-wave detection in electrocardiogram signal. IET Signal Processing, 2009, 3, 381.	0.9	85
190	Noise Cancellation on ECG and Heart Rate Signals Using the Undecimated Wavelet Transform. , 2009, , .		18
191	Enhancement of a QRS detection algorithm based on the first derivative, using techniques of a QRS detector algorithm based on non-linear transformations. IFMBE Proceedings, 2009, , 393-396.	0.2	7
192	QRS Complexes Detection by Using the Principal Component Analysis and the Combined Wavelet Entropy for 12-Lead Electrocardiogram Signals. , 2009, , .		3
193	A real-time ECG QRS detection ASIC based on wavelet multiscale analysis. , 2009, , .		25
194	A new method to compute T Wave Alternans. , 2009, , .		0
195	A robust delineation approach of electrocardiographic P waves. , 2009, , .		7
196	Wavelet and Hilbert transforms based QRS complexes detection algorithm for wearable ECG devices in wireless Body Sensor Networks. , 2009, , .		12
197	A new method for instantaneous signal period identification by repetitive pattern matching. , 2009, , .		2
198	Detection of P, QRS, and T Components of ECG using wavelet transformation. , 2009, , .		26
199	CardioGrid: ECG analysis on demand to detect cardiovascular abnormalities. , 2009, , .		2
200	Power efficient cross-correlation beat detection in electrocardiogram analysis using bitstreams. , 2009, , .		3
201	Arrhythmia Beat Classification Using Pruned Fuzzy K-Nearest Neighbor Classifier. , 2009, , .		18
202	Content-based image descriptors for enhanced person annotation in personal digital photo archives. , 2009, , .		3
203	Design of a Microcontroller-Based ECG Measurement System to Detect QRS Complex with dECG in Real-Time. Instrumentation Science and Technology, 2009, 37, 503-515.	0.9	4
204	QRS Detection Based on Multiscale Mathematical Morphology for Wearable ECG Devices in Body Area Networks. IEEE Transactions on Biomedical Circuits and Systems, 2009, 3, 220-228.	2.7	194

#	ARTICLE	IF	CITATIONS
205	Noise removal from electrocardiogram signal employing an artificial neural network in wavelet domain. , 2009, , .		1
206	Heart Instantaneous Frequency Based Estimation of HRV from Blood Pressure Waveforms. IEICE Transactions on Information and Systems, 2009, E92-D, 529-537.	0.4	3
207	Using ambient intelligence for physiological monitoring. Journal of Ambient Intelligence and Smart Environments, 2009, 1, 129-142.	0.8	5
208	A real-time adaptive filtering approach to motion artefacts removal from ECG signals. International Journal of Biomedical Engineering and Technology, 2010, 3, 233.	0.2	15
209	Development of an embedded system and MATLAB-based GUI for online acquisition and analysis of ECG signal. Measurement: Journal of the International Measurement Confederation, 2010, 43, 1119-1126.	2.5	59
210	Selection of Dynamic Features Based on Time-Frequency Representations for Heart Murmur Detection from Phonocardiographic Signals. Annals of Biomedical Engineering, 2010, 38, 118-137.	1.3	70
211	Falling-Edge, Variable Threshold (FEVT) Method for the Automated Detection of Gastric Slow Wave Events in High-Resolution Serosal Electrode Recordings. Annals of Biomedical Engineering, 2010, 38, 1511-1529.	1.3	68
212	Nonconstrained Sleep Monitoring System and Algorithms Using Air-Mattress With Balancing Tube Method. IEEE Transactions on Information Technology in Biomedicine, 2010, 14, 147-156.	3.6	83
213	<i>Prognosis</i>â€”A Wearable Health-Monitoring System for People at Risk: Methodology and Modeling. IEEE Transactions on Information Technology in Biomedicine, 2010, 14, 613-621.	3.6	103
214	A Patient-Adaptive Profiling Scheme for ECG Beat Classification. IEEE Transactions on Information Technology in Biomedicine, 2010, 14, 1153-1165.	3.6	79
215	K-means algorithm for the detection and delineation of QRS-complexes in Electrocardiogram. Irbm, 2010, 31, 48-54.	3.7	57
216	Characterizing atypical patterns of Heart Rate before Paroxysmal Ventricular Tachycardia. Medical Engineering and Physics, 2010, 32, 1131-1136.	0.8	0
217	Non-Invasive Estimation of Systolic Blood Pressure and Diastolic Blood Pressure Using Photoplethysmograph Components. Yonsei Medical Journal, 2010, 51, 345.	0.9	26
218	Heart rate variability asÂmeasurement ofÂheart-brain interactions. Epilepsies, 2010, 22, 194-200.	0.0	4
219	Application of the phasor transform for automatic delineation of single-lead ECG fiducial points. Physiological Measurement, 2010, 31, 1467-1485.	1.2	176
220	A new method for automatic delineation of ECG fiducial points based on the Phasor Transform. , 2010, 2010, 4586-9.		17
221	Detection of QRS complex in ECG signal based on classification approach. , 2010, , .		5
222	QRS Complex Detection Using Cubic Splines. , 2010, , .		1

#	ARTICLE	IF	CITATIONS
223	Using single/multi-channel energy transform as preprocessing tool for magnetoencephalographic data-based applications. , 2010, , .		1
224	Prototype of a standalone Fetal ECG monitor. , 2010, , .		0
225	Power and Area Efficient Wavelet-Based On-chip ECG Processor for WBAN. , 2010, , .		10
226	Parallel processing of ECG and blood pressure waveforms for detection of acute hypotensive episodes: a simulation study using a risk scoring model. Computer Methods in Biomechanics and Biomedical Engineering, 2010, 13, 197-213.	0.9	23
227	Implementation of derivative based QRS complex detection methods. , 2010, , .		6
228	On-Node Processing of ECG Signals. , 2010, , .		12
229	An Efficient Algorithm and Embedded Multicore Implementation of ECG Analysis in Multi-lead Electrocardiogram Records. , 2010, , .		5
230	Direct Analog-to-QRS detection front-end architecture for wearable ECG applications. , 2010, 2010, 6527-30.		3
231	Wavelet based R-peak detection for heart rate variability studies. Journal of Medical Engineering and Technology, 2010, 34, 108-115.	0.8	16
232	Myocardial Calcification and Hypertension following Chronic Renal Failure and Ameliorative Effects of Furosemide and Captopril. Cardiology, 2010, 116, 194-205.	0.6	7
233	Combinatorial ECG analysis for mobile devices. , 2010, , .		2
234	Biosignal Processing to Meet the Emerging Needs of Telehealth Monitoring Environments. Lecture Notes in Electrical Engineering, 2010, , 263-280.	0.3	6
235	An approach to QRS complex detection based on multiscale mathematical morphology. , 2010, , .		10
236	ECG feature extraction and classification of anteroseptal myocardial infarction and normal subjects using discrete wavelet transform. , 2010, , .		20
237	Power-Efficient Cross-Correlation Beat Detection in Electrocardiogram Analysis Using Bitstreams. IEEE Transactions on Biomedical Circuits and Systems, 2010, 4, 419-425.	2.7	11
238	A knowledge-based approach to cardiac signal analysis using LabVIEW. , 2010, , .		2
239	Automated recognition of obstructive sleep apnoea syndrome from ECG recordings. , 2010, , .		2
240	A low power biomedical signal processing system-on-chip design for portable brain-heart monitoring systems. , 2010, , .		9

#	ARTICLE	IF	CITATIONS
241	Computer Analysis of the Electrocardiogram. , 2010, , 1721-1765.		6
242	Mechanically Flexible Wireless Multisensor Platform for Human Physical Activity and Vitals Monitoring. IEEE Transactions on Biomedical Circuits and Systems, 2010, 4, 281-294.	2.7	91
243	An automatic multi-lead electrocardiogram segmentation algorithm based on abrupt change detection. , 2010, 2010, 2334-7.		6
244	Electrocardiogram signal processing method for exact Heart Rate detection in physical activity monitoring system: Wavelet approach. , 2010, , .		2
245	Comparison of CWT with DWT for detecting Qrs Complex on Wearable ECG Recorder. , 2010, , .		7
246	QRS wave group detection based on B-Spline wavelet and adaptive threshold. , 2010, , .		3
247	QRS Complex Detection by Non Linear Thresholding of Modulus Maxima. , 2010, , .		1
248	R-wave detection: A comparative analysis of four methods using newborn piglet ECG. , 2010, , .		3
249	The effect of lossy ECG compression on QRS and HRV feature extraction. , 2010, 2010, 634-7.		5
250	The contribution of the phase spectrum in automatic multiple cardiac arrhythmias recognition in wearable systems. , 2010, , .		2
251	Biosignal quality detection: An essential feature for unsupervised telehealth applications. , 2010, , .		9
252	A ± 6 ms-accuracy, 0.68mm^2 and 2.21% W QRS detection ASIC. , 2010, , .		8
253	Online heart rate estimation in unstable ballistocardiographic records. , 2010, 2010, 939-42.		7
254	ECG signal acquisition and analysis for telemonitoring. , 2010, , .		7
255	An economical and feasible teaching tool for biomedical education. , 2011, , .		4
256	The identification of ventricular escape beat based on wavelet transform and BP Neural Network. , 2011, , .		0
257	Comparative study of morphological ECG features classifiers: An application on athletes undergone to acute physical stress. , 2011, , .		4
258	12 Lead QRS Window Detection: Using Feature Extraction and Statistical Parameters. , 2011, , .		1

#	ARTICLE	IF	CITATIONS
259	A classification approach for myocardial infarction using voltage features extracted from four standard ECG leads. , 2011, , .		4
260	Design a digital system for detection of abnormality condition of heart from ECG waveforms. , 2011, , .		2
261	A real-time heart beat detector and quantitative investigation based on FPGA. , 2011, , .		4
262	Designing for reliable textile neonatal ECG monitoring using multi-sensor recordings. , 2011, 2011, 2488-91.		10
263	A simple and robust QRS detection algorithm for wireless medical body area network. , 2011, , .		14
264	Application of higher order cumulants to ECG signals for the cardiac health diagnosis. , 2011, 2011, 1697-700.		37
265	Design, development and testing of a wireless sensor network for medical applications. , 2011, , .		4
266	Low Cost, Low Power QRS Detection Module Using PIC. , 2011, , .		3
267	An algorithm for detection of arrhythmia. , 2011, , .		3
268	ECG beat classification using features extracted from Teager energy functions in time and frequency domains. IET Signal Processing, 2011, 5, 575.	0.9	56
269	Development of DE based adaptive techniques for nonlinear system identification. , 2011, , .		0
270	Input-Feature Correlated Asynchronous Analog to Information Converter for ECG Monitoring. IEEE Transactions on Biomedical Circuits and Systems, 2011, 5, 459-467.	2.7	43
271	A DSP Practical Application: Working on ECG Signal. , 0, , .		0
272	Intelligent multichannel sensors for pulse wave analysis. Mathematics and Computers in Simulation, 2011, 82, 483-493.	2.4	4
273	An Ultra Low Energy Biomedical Signal Processing System Operating at Near-Threshold. IEEE Transactions on Biomedical Circuits and Systems, 2011, 5, 546-554.	2.7	34
274	Multiple Functional ECG Signal is Processing for Wearable Applications of Long-Term Cardiac Monitoring. IEEE Transactions on Biomedical Engineering, 2011, 58, 380-389.	2.5	73
275	Automated ECG diagnostic P-wave analysis using wavelets. Computer Methods and Programs in Biomedicine, 2011, 101, 33-43.	2.6	22
276	Comparative study of approximate entropy and sample entropy robustness to spikes. Artificial Intelligence in Medicine, 2011, 53, 97-106.	3.8	79

#	ARTICLE	IF	CITATIONS
277	QRS Detection Based on Morphological Filter and Energy Envelope for Applications in Body Sensor Networks. Journal of Signal Processing Systems, 2011, 64, 187-194.	1.4	38
278	Patient Outcome Prediction with Heart Rate Variability and Vital Signs. Journal of Signal Processing Systems, 2011, 64, 265-278.	1.4	28
279	QRS complex detection based on multi wavelet packet decomposition. Applied Mathematics and Computation, 2011, 217, 9508-9525.	1.4	71
280	Optimization methods for improving the performance of heart rate detection by a wearable ECG system during high-intensity exercise. Biomedical Engineering Letters, 2011, 1, 143-150.	2.1	5
281	Auto-detection of R wave in ECG (electrocardiography) for patch-type ECG remote monitoring system. Biomedical Engineering Letters, 2011, 1, 180-187.	2.1	9
282	An Efficient R-peak Detection Based on New Nonlinear Transformation and First-Order Gaussian Differentiator. Cardiovascular Engineering and Technology, 2011, 2, 408-425.	0.7	83
283	New approach for T-wave end detection on electrocardiogram: Performance in noisy conditions. BioMedical Engineering OnLine, 2011, 10, 77.	1.3	65
284	An expert system for automated recognition of patients with obstructive sleep apnea using electrocardiogram recordings. Expert Systems With Applications, 2011, 38, 12880-12890.	4.4	43
285	Prediction of pharmacologically induced baroreflex sensitivity from local time and frequency domain indices of R-R interval and systolic blood pressure signals obtained during deep breathing. Computers in Biology and Medicine, 2011, 41, 442-448.	3.9	4
286	Studies on fractional order differentiators and integrators: A survey. Signal Processing, 2011, 91, 386-426.	2.1	430
287	ECG Beat Classification Using Optimal Projections in Overcomplete Dictionaries. , 2011, , .		1
288	Method for segmentation of cardiac signals based on four parameter sine fitting. , 2011, , .		3
289	A modified algorithm for maternal heart rate detection using RR interval. , 2011, , .		3
290	Time-domain ECG signal analysis based on smart-phone. , 2011, 2011, 2582-5.		8
291	Design and Realization of Portable ECG Monitor with Dual CPU. Advanced Materials Research, 0, 340, 451-455.	0.3	0
292	A FPGA system for QRS complex detection based on Integer Wavelet Transform. Measurement Science Review, 2011, 11, .	0.6	24
293	An electrocardiogram classification method based on cascade Support Vector Machine. , 2011, , .		2
294	Low-complexity R-peak detection in ECG signals: A preliminary step towards ambulatory fetal monitoring. , 2011, 2011, 1761-4.		21

#	ARTICLE	IF	CITATIONS
295	Rapid processor customization for design optimization: A case study of ECG R-peak detection. , 2011, , .		0
296	Using EKG signals for virtual pathology stethoscope tracking in standardized patient heart auscultation. , 2011, , .		1
297	Noncontact imaging photoplethysmography to effectively access pulse rate variability. Journal of Biomedical Optics, 2012, 18, 061205.	1.4	124
298	Dominant Lyapunov exponent and approximate entropy in heart rate variability during emotional visual elicitation. Frontiers in Neuroengineering, 2012, 5, 3.	4.8	86
299	Role of editing of R-R intervals in the analysis of heart rate variability. Frontiers in Physiology, 2012, 3, 148.	1.3	210
300	SAFE-points. , 2012, , .		1
301	Bidirectional ECG Monitoring with an Event Detection Policy Engine. , 2012, , .		0
302	Multi-lead QRS detection using window pairs. , 2012, 2012, 3143-6.		5
303	Development of wearable heart disease monitoring and alerting system associated with smartphone. , 2012, , .		11
304	A 14.5 fJ/cycle/k-gate, 0.33 V ECG processor in 45nm CMOS using statistical error compensation. , 2012, , .		5
305	Wireless system for remote monitoring of atrial fibrillation. , 2012, , .		9
306	Low-complexity R-peak detection for ambulatory fetal monitoring. Physiological Measurement, 2012, 33, 1135-1150.	1.2	66
307	A ECG Waveform Detection Algorithm Based on Differential Threshold and Wavelet Transform. Advanced Engineering Forum, 2012, 4, 249-254.	0.3	5
308	A $\pm 6\%$ Accuracy, 0.68mm^2 , and 2.21mW QRS Detection ASIC. VLSI Design, 2012, 2012, 1-13.		0.5
309	Heartbeat biometrics: a sensing system perspective. International Journal of Cognitive Biometrics, 2012, 1, 39.	1.2	13
310	Support vector machine-based QRS-detection - evaluation on standard databases. International Journal of Medical Engineering and Informatics, 2012, 4, 299.	0.2	2
311	The Role of Nonlinear Dynamics in Affective Valence and Arousal Recognition. IEEE Transactions on Affective Computing, 2012, 3, 237-249.	5.7	186
312	Oscillations of Heart Rate and Respiration Synchronize During Affective Visual Stimulation. IEEE Transactions on Information Technology in Biomedicine, 2012, 16, 683-690.	3.6	56

#	ARTICLE	IF	CITATIONS
313	VLSI Friendly ECG QRS Complex Detector for Body Sensor Networks. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 52-59.	2.7	80
314	An Ultra-Low Power ECG Acquisition and Monitoring ASIC System for WBAN Applications. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 60-70.	2.7	53
315	An Introduction to ECG Signal Processing and Analysis. , 2012, , 21-46.		8
316	A new approach of QRS complex detection based on matched filtering and triangle character analysis. Australasian Physical and Engineering Sciences in Medicine, 2012, 35, 341-356.	1.4	14
317	Prediction of cardiac arrest in critically ill patients presenting to the emergency department using a machine learning score incorporating heart rate variability compared with the modified early warning score. Critical Care, 2012, 16, R108.	2.5	95
318	Measurement fidelity of heart rate variability signal processing: The devil is in the details. International Journal of Psychophysiology, 2012, 86, 88-97.	0.5	28
319	ECG Signal Compression using Optimum Wavelet Filter Bank Based on Kaiser Window. Procedia Engineering, 2012, 38, 2889-2902.	1.2	26
320	R-Peak Detection Algorithm for Ecg using Double Difference And RR Interval Processing. Procedia Technology, 2012, 4, 873-877.	1.1	75
321	An R-peak detection method that uses an SVD filter and a search back system. Computer Methods and Programs in Biomedicine, 2012, 108, 1121-1132.	2.6	26
322	Towards smart health monitoring system for elderly people. , 2012, , .		2
323	ECG baseline drift correction through phase space for simple R-point detection. , 2012, , .		4
324	Detection of ECG characteristic features using slope thresholding and relative magnitude comparison. , 2012, , .		14
325	Evaluation of Weight Factor Mode and EEMD performance on measuring heart rate activity in the presence of cardiac arrhythmia. , 2012, , .		0
326	A simple real-time QRS detection algorithm utilizing curve-length concept with combined adaptive threshold for electrocardiogram signal classification. , 2012, , .		19
327	Superiority analysis of MLMS over adaptive filtering methods for hearth arrhythmias detection. , 2012, , .		0
328	Application of crosswavelet transform and Wavelet Coherence for classification of ECG patterns. , 2012, , .		2
329	Application of principal component analysis to ECG signals for automated diagnosis of cardiac health. Expert Systems With Applications, 2012, 39, 11792-11800.	4.4	242
330	QRS detection based on wavelet coefficients. Computer Methods and Programs in Biomedicine, 2012, 107, 490-496.	2.6	227

#	ARTICLE	IF	CITATIONS
331	Evolutionary Optimization of ECG Feature Extraction Methods: Applications to the Monitoring of Adult Myocardial Ischemia and Neonatal Apnea Bradycardia Events. , 2012, , 237-273.		6
332	An innovative approach of QRS segmentation based on first-derivative, Hilbert and Wavelet Transforms. Medical Engineering and Physics, 2012, 34, 1236-1246.	0.8	86
333	ECG Signal Processing, Classification and Interpretation. , 2012, , .		70
334	A PD control-based QRS detection algorithm for wearable ECG applications. , 2012, 2012, 5638-41.		5
335	Novel simple decision stage of Pan & Tompkins QRS detector and its FPGA-Based implementation. , 2012, , .		6
336	An approach for ECG based cardiac abnormality detection through the scope of Cross Wavelet Transform. , 2012, , .		0
337	A 0.83- μ m QRS Detection Processor Using Quadratic Spline Wavelet Transform for Wireless ECG Acquisition in 0.35- μ m CMOS. IEEE Transactions on Biomedical Circuits and Systems, 2012, 6, 586-595.	2.7	112
338	Development of a concept demonstrator for QRS complex detection using combined algorithms. , 2012, , .		7
339	Performance of Wavelet Energy Gradient method for QRS detection. , 2012, , .		3
340	ECG analysis in the Time-Frequency domain. , 2012, , .		2
341	QRST cancellation in ECG signals during atrial fibrillation: Zero-padding versus time alignment. , 2012, , .		1
342	Gabor feature extraction for electrocardiogram signals. , 2012, , .		2
343	Real time reconstruction of quasiperiodic multi parameter physiological signals. Eurasip Journal on Advances in Signal Processing, 2012, 2012, .	1.0	14
344	A wireless body measurement system to study fatigue in multiple sclerosis. Physiological Measurement, 2012, 33, 2033-2048.	1.2	15
345	A Comprehensive Algorithm for the Analysis of ECG Waveforms. , 2012, , .		3
346	ECG-Multichannel Frontend for Quick Stimulus Response Based on FPGA with Implemented Real-Time, Online QRS Detection Algorithm. Biomedizinische Technik, 2012, 57, .	0.9	0
347	Quantification of Ventricular Repolarization Dispersion Using Digital Processing of the Surface ECG. , 0, , .		7
348	A Time-Domain Morphology and Gradient based algorithm for ECG feature extraction. , 2012, , .		39

#	ARTICLE	IF	CITATIONS
349	Field Programmable Gate Array Based Fuzzy Neural Signal Processing System for Differential Diagnosis of QRS Complex Tachycardia and Tachyarrhythmia in Noisy ECG Signals. Journal of Medical Systems, 2012, 36, 765-775.	2.2	14
350	A novel method for detecting R-peaks in electrocardiogram (ECG) signal. Biomedical Signal Processing and Control, 2012, 7, 118-128.	3.5	314
351	An autonomic cloud environment for hosting ECG data analysis services. Future Generation Computer Systems, 2012, 28, 147-154.	4.9	192
352	Feature extraction for ECG heartbeats using higher order statistics of WPD coefficients. Computer Methods and Programs in Biomedicine, 2012, 105, 257-267.	2.6	188
353	Delineation of ECG characteristic features using multiresolution wavelet analysis method. Measurement: Journal of the International Measurement Confederation, 2012, 45, 474-487.	2.5	126
354	Beat-to-beat heart rate detection in multi-lead abdominal fetal ECG recordings. Medical Engineering and Physics, 2012, 34, 333-338.	0.8	13
355	Detection and Localization of Myocardial Infarction using K-nearest Neighbor Classifier. Journal of Medical Systems, 2012, 36, 279-289.	2.2	175
356	Comparison of first and second heart sounds after mechanical heart valve replacement. Computer Methods in Biomechanics and Biomedical Engineering, 2013, 16, 368-380.	0.9	9
357	ECG beat classification using wavelets and SVM. , 2013, , .		29
358	Robust inter-beat interval estimation in cardiac vibration signals. Physiological Measurement, 2013, 34, 123-138.	1.2	161
359	Beta wavelet based ECG signal compression using lossless encoding with modified thresholding. Computers and Electrical Engineering, 2013, 39, 130-140.	3.0	87
360	An Ultra-Low Power QRS Complex Detection Algorithm Based on Down-Sampling Wavelet Transform. IEEE Signal Processing Letters, 2013, 20, 515-518.	2.1	85
361	Electrocardiogram Pattern Recognition and Analysis Based on Artificial Neural Networks and Support Vector Machines: A Review. Journal of Healthcare Engineering, 2013, 4, 465-504.	1.1	62
362	Detection of position of replaced mechanical heart valve with ANN. , 2013, , .		0
363	Heart rate variability risk score for prediction of acute cardiac complications in ED patients with chest pain. American Journal of Emergency Medicine, 2013, 31, 1201-1207.	0.7	37
364	ECG fiducial points extraction by extended Kalman filtering. , 2013, , .		7
365	A Comparison of Three QRS Detection Algorithms Over a Public Database. Procedia Technology, 2013, 9, 1159-1165.	1.1	51
366	ECG beat classification based on discrete wavelet transformation and nearest neighbour classifier. Journal of Medical Engineering and Technology, 2013, 37, 264-272.	0.8	13

#	ARTICLE	IF	CITATIONS
367	An R-peak detection method based on peaks of Shannon energy envelope. Biomedical Signal Processing and Control, 2013, 8, 466-474.	3.5	68
368	Cardiac decision making using higher order spectra. Biomedical Signal Processing and Control, 2013, 8, 193-203.	3.5	178
369	A Robust Reference Signal Generator for Synchronized Ventricular Assist Devices. IEEE Transactions on Biomedical Engineering, 2013, 60, 2174-2183.	2.5	20
370	A new combinatorial algorithm for QRS detection. , 2013, , .		7
371	A feasibility research on waveform recognition algorithm based on geometric characteristics. , 2013, , .		1
372	DESIGN OF A MICROCONTROLLER-BASED REAL-TIME HEART RATE VARIABILITY MEASUREMENT SYSTEM USING A LOW-COMPLEXITY R-PEAK DETECTION ALGORITHM. Instrumentation Science and Technology, 2013, 41, 274-289.	0.9	3
373	Estimating the Universal Positions of Wireless Body Electrodes for Measuring Cardiac Electrical Activity. IEEE Transactions on Biomedical Engineering, 2013, 60, 3368-3374.	2.5	31
374	How speech processing can help with beat-to-beat heart rate estimation in ballistocardiograms. , 2013, , .		18
375	Development and validation of a novel fusion algorithm for continuous, accurate, and automated R-wave detection and calculation of signal-derived metrics. Journal of Critical Care, 2013, 28, 885.e9-885.e18.	1.0	7
376	QRS detection using K-Nearest Neighbor algorithm (KNN) and evaluation on standard ECG databases. Journal of Advanced Research, 2013, 4, 331-344.	4.4	244
377	Real-time CHF detection from ECG signals using a novel discretization method. Computers in Biology and Medicine, 2013, 43, 1556-1562.	3.9	28
378	Design of Wavelet-Based ECG Detector for Implantable Cardiac Pacemakers. IEEE Transactions on Biomedical Circuits and Systems, 2013, 7, 426-436.	2.7	86
379	Wireless Medical-Embedded Systems: A Review of Signal-Processing Techniques for Classification. IEEE Sensors Journal, 2013, 13, 423-437.	2.4	43
380	Absence epilepsy seizure onsets detection based on ECG signal analysis. , 2013, , .		2
381	An Energy-Efficient ECG Processor in 45-nm CMOS Using Statistical Error Compensation. IEEE Journal of Solid-State Circuits, 2013, 48, 2882-2893.	3.5	38
382	Algorithms Based on CWT and Classifiers to Control Cardiac Alterations and Stress Using an ECG and a SCR. Sensors, 2013, 13, 6141-6170.	2.1	19
383	Orientation invariant ECG-based stethoscope tracking for heart auscultation training on augmented standardized patients. Simulation, 2013, 89, 1450-1458.	1.1	6
384	Health monitoring laboratories by interfacing physiological sensors to mobile android devices. , 2013, , .		15

#	ARTICLE	IF	CITATIONS
385	TRS-TMS: An EEGLAB plugin for the reconstruction of onsets in EEG-TMS datasets. , 2013, , .		1
386	Fiducial points extraction and characteristic waves detection in ECG signal using a model-based bayesian framework. , 2013, , .		7
387	fâ€Wave Suppression Method for Improvement of Locating Tâ€Wave Ends in Electrocardiograms during Atrial Fibrillation. Annals of Noninvasive Electrocardiology, 2013, 18, 262-270.	0.5	1
388	A Comparison of Different Classifiers Architectures for Electrocardiogram Artefacts Recognition. Lecture Notes in Computer Science, 2013, , 254-261.	1.0	2
389	Development of a low-cost wireless monitoring System supporting the Continuity of Medical Care of the Patient at home. , 2013, 2013, 5191-4.		7
390	Real Time QRS Detection Based on M-ary Likelihood Ratio Test on the DFT Coefficients. PLoS ONE, 2014, 9, e110629.	1.1	5
391	Musical Rhythms Affect Heart Rate Variability: Algorithm and Models. Advances in Electrical Engineering, 2014, 2014, 1-14.	1.1	4
392	VLSI design of ECG QRS complex detection using Multiscale Mathematical Morphology. , 2014, , .		0
393	Complex fractional and complex Morlet wavelets for QRS complex detection. , 2014, , .		7
394	Heart rate estimation by iterative Fourier interpolation algorithm. Electronics Letters, 2014, 50, 1799-1801.	0.5	3
395	An optimized lead system for long-term esophageal electrocardiography. Physiological Measurement, 2014, 35, 517-532.	1.2	8
396	A cross wavelet transform based approach for ECG feature extraction and classification without denoising. , 2014, , .		6
397	EMD-Based Electrocardiogram Delineation for a Wearable Low-Power ECG Monitoring Device. Canadian Journal of Electrical and Computer Engineering, 2014, 37, 212-221.	1.5	15
398	ECG Signal Analysis. , 2014, , 15-49.		2
399	Straightforward and robust QRS detection algorithm for wearable cardiac monitor. Healthcare Technology Letters, 2014, 1, 40-44.	1.9	32
400	Denosing of ECG signals using dual tree complex wavelet transform. , 2014, , .		5
401	Informationâ€enhanced sparse binary matrix in compressed sensing for ECG. Electronics Letters, 2014, 50, 1271-1273.	0.5	13
402	Human turnover dynamics during sleep: Statistical behavior and its modeling. Physical Review E, 2014, 89, 032721.	0.8	7

#	ARTICLE	IF	CITATIONS
403	Development and preliminary evaluation of an Android based heart rate variability biofeedback system. , 2014, 2014, 3382-5.		7
404	Discrete Wavelet Transform based algorithm for recognition of QRS complexes. , 2014, , .		38
405	Identification of QRS complexes in single-lead ECG Using LS-SVM. , 2014, , .		3
406	A Novel Method for Real-Time Atrial Fibrillation Detection in Electrocardiograms Using Multiple Parameters. Annals of Noninvasive Electrocardiology, 2014, 19, 217-225.	0.5	53
407	A simple and effective algorithm for R-wave detection using smartphones. , 2014, , .		0
408	A Machine Learning Approach to Objective Cardiac Event Detection. , 2014, , .		1
409	Left-Ventricular Mechanical Activation and Aortic-Arch Orientation Recovered from Magneto-Hydrodynamic Voltages Observed in 12-Lead ECGs Obtained Inside MRIs: A Feasibility Study. Annals of Biomedical Engineering, 2014, 42, 2480-2489.	1.3	8
410	An FPGA-based implementation of a pre-processing stage for ECG signal analysis using DWT. , 2014, , .		6
411	An advanced algorithm for fetal heart rate estimation from non-invasive low electrode density recordings. Physiological Measurement, 2014, 35, 1621-1636.	1.2	29
412	Evolutionary Computation for Design of Preprocessing Filters in QRS Detection Algorithm. Advances in Intelligent Systems and Computing, 2014, , 273-280.	0.5	2
413	Objectifying Facial Expressivity Assessment of Parkinson's Patients: Preliminary Study. Computational and Mathematical Methods in Medicine, 2014, 2014, 1-12.	0.7	33
414	Influence of Electrode Placement on Signal Quality for Ambulatory Pregnancy Monitoring. Computational and Mathematical Methods in Medicine, 2014, 2014, 1-12.	0.7	64
415	An efficient new method for the detection of QRS in electrocardiogram. Computers and Electrical Engineering, 2014, 40, 1717-1730.	3.0	86
416	A Level-Crossing Based QRS-Detection Algorithm for Wearable ECG Sensors. IEEE Journal of Biomedical and Health Informatics, 2014, 18, 183-192.	3.9	131
417	Reliable real-time calculation of heart-rate complexity in critically ill patients using multiple noisy waveform sources. Journal of Clinical Monitoring and Computing, 2014, 28, 123-131.	0.7	5
418	WE-CARE: An Intelligent Mobile Telecardiology System to Enable mHealth Applications. IEEE Journal of Biomedical and Health Informatics, 2014, 18, 693-702.	3.9	86
419	Current methods in electrocardiogram characterization. Computers in Biology and Medicine, 2014, 48, 133-149.	3.9	198
420	3DQRS: A method to obtain reliable QRS complex detection within high field MRI using 12-lead electrocardiogram traces. Magnetic Resonance in Medicine, 2014, 71, 1374-1380.	1.9	23

#	ARTICLE	IF	CITATIONS
421	A low-complexity ECG processing algorithm based on the Haar wavelet transform for portable health-care devices. Science China Information Sciences, 2014, 57, 1-14.	2.7	9
422	Diastolic Timed Vibrator: Noninvasive Pre-Hospitalization Treatment of Acute Coronary Ischemia. IEEE Transactions on Biomedical Circuits and Systems, 2014, 8, 313-324.	2.7	4
423	A New LMS Based Noise Removal and DWT Based R-peak Detection in ECG Signal for Biotelemetry Applications. The National Academy of Sciences, India, 2014, 37, 341-349.	0.8	26
424	Simultaneous 12-lead QRS detection by K-means clustering algorithm. , 2014, , .		1
425	LabVIEW based design of heart disease detection system. , 2014, , .		11
426	Cardiac Arrhythmia Classification of ECG Signal Using Morphology and Heart Beat Rate. , 2014, , .		8
427	Integrate and Fire Pulse Train Automaton for QRS detection. IEEE Transactions on Biomedical Engineering, 2014, 61, 317-326.	2.5	53
428	Computer aided diagnosis of atrial arrhythmia using dimensionality reduction methods on transform domain representation. Biomedical Signal Processing and Control, 2014, 13, 295-305.	3.5	85
429	A low cost stethoscopic system for real time auscultation of heart sound. , 2014, , .		2
431	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
432	Automated analysis of ECG waveforms with atypical QRS complex morphologies. Biomedical Signal Processing and Control, 2014, 10, 41-49.	3.5	34
433	Intelligent system for detecting cardiac arrhythmia on FPGA. , 2014, , .		7
434	A heart rate detection method for low power exercise intensity monitoring device. , 2014, , .		3
435	Effects of acute hypoxia on heart rate variability, sample entropy and cardiorespiratory phase synchronization. BioMedical Engineering OnLine, 2014, 13, 73.	1.3	39
436	ECG image representation of normal sinus rythm. , 2014, , .		2
437	QRS detection using S-Transform and Shannon energy. Computer Methods and Programs in Biomedicine, 2014, 116, 1-9.	2.6	123
438	Software-based detection of atrial fibrillation in long-term ECGs. Heart Rhythm, 2014, 11, 933-938.	0.3	17
439	Threshold-Independent QRS Detection Using the Dynamic Plosion Index. IEEE Signal Processing Letters, 2014, 21, 554-558.	2.1	45

#	ARTICLE	IF	CITATIONS
440	Sigmoidal radial basis function ANN for QRS complex detection. Neurocomputing, 2014, 145, 438-450.	3.5	48
441	A novel low-complexity post-processing algorithm for precise QRS localization. SpringerPlus, 2014, 3, 376.	1.2	26
442	ECG signal analysis using Hilbert transform. , 2015, , .		7
443	Enhanced algorithm for QRS detection using discrete wavelet transform (DWT). , 2015, , .		11
444	Analysis of patient outcome using ECG and extreme learning machine ensemble. , 2015, , .		2
445	Telecardiology. , 2015, , 433-462.		0
446	Direct patterning of organic conductors on knitted textiles for long-term electrocardiography. Scientific Reports, 2015, 5, 15003.	1.6	145
447	Wearable Electronics. , 2015, , 36-113.		0
448	Signal quality indices for state space electrophysiological signal processing and vice versa. , 0, , 345-366.		3
449	Machine intelligent diagnosis of ECG for arrhythmia classification using DWT, ICA and SVM techniques. , 2015, , .		45
450	Textile sensor system for electrocardiogram monitoring. , 2015, , .		11
451	Wavelet packet based algorithm for QRS region detection and R/S wave identification. , 2015, , .		4
452	Applying Non Linear Approach for ECG Denoising and Waves Localization. , 2015, , .		1
453	Individual identification via electrocardiogram analysis. BioMedical Engineering OnLine, 2015, 14, 78.	1.3	100
454	Basal sympathetic predominance in periodic limb movements in sleep with obstructive sleep apnea. Journal of Sleep Research, 2015, 24, 722-729.	1.7	19
455	Hybrid Features and Classifier for Classification of ECG Signal. Research Journal of Applied Sciences, Engineering and Technology, 2015, 9, 1034-1050.	0.1	2
456	A piecewise geometric analysis method for real-time ambulatory ECG detection. Technology and Health Care, 2015, 23, S335-S342.	0.5	2
457	A Lightweight Symmetric Key based Cryptographic System for Wireless Body Sensor Network. Research Journal of Applied Sciences, Engineering and Technology, 2015, 11, 516-522.	0.1	0

#	ARTICLE	IF	CITATIONS
458	Automatic Real-Time Embedded QRS Complex Detection for a Novel Patch-Type Electrocardiogram Recorder. IEEE Journal of Translational Engineering in Health and Medicine, 2015, 3, 1-12.	2.2	27
459	A multi-wavelet optimization approach using similarity measures for electrocardiogram signal classification. Biomedical Signal Processing and Control, 2015, 20, 142-151.	3.5	23
460	Optimizing the short- and long term regression for QRS detection in presence of missing data. , 2015, , .		1
461	A novel approach for QRS delineation in ECG signal based on chirplet transform. , 2015, , .		6
462	Real-time obstructive sleep apnea detection from frequency analysis of EDR and HRV using Lomb Periodogram. , 2015, 2015, 5989-92.		6
463	A real-time R-wave detection method for wireless ambulatory ECG telemetry. International Journal of Biomedical Engineering and Technology, 2015, 19, 26.	0.2	1
464	Software tool for the analysis of components characteristic for ECG signal. , 2015, , .		0
465	Robust detection of heart beats in multimodal data. Physiological Measurement, 2015, 36, 1629-1644.	1.2	44
466	Robust detection of ECG waves. , 2015, , .		0
467	QRS complex detection in ECG signal for wearable devices. , 2015, 2015, 5940-3.		16
468	Robust detection of heart beats in multimodal records using slope- and peak-sensitive band-pass filters. Physiological Measurement, 2015, 36, 1645-1664.	1.2	19
469	Detection of heart beats in multimodal data: a robust beat-to-beat interval estimation approach. Physiological Measurement, 2015, 36, 1679-1690.	1.2	20
470	How the Autonomic Nervous System and Driving Style Change With Incremental Stressing Conditions During Simulated Driving. IEEE Transactions on Intelligent Transportation Systems, 2015, 16, 1505-1517.	4.7	101
471	Smart helmet: Monitoring brain, cardiac and respiratory activity. , 2015, 2015, 1829-32.		6
472	New system cardiac arrhythmia detection on FPGA. , 2015, , .		4
473	R-peak detection algorithm based on differentiation. , 2015, , .		22
474	A Method for QRS Delineation Based on STFT Using Adaptive Threshold. Procedia Computer Science, 2015, 54, 646-653.	1.2	12
475	A new approach to robust, weighted signal averaging. Biocybernetics and Biomedical Engineering, 2015, 35, 317-327.	3.3	10

#	ARTICLE	IF	CITATIONS
476	A simple and robust algorithm for the detection of QRS complexes. , 2015, , .		2
477	Data fusion for QRS complex detection in multi-lead electrocardiogram recordings. Proceedings of SPIE, 2015, , .	0.8	4
478	Ectopic beats detection and correction methods: A review. Biomedical Signal Processing and Control, 2015, 18, 228-244.	3.5	39
479	New real-time heartbeat detection method using the angle of a single-lead electrocardiogram. Computers in Biology and Medicine, 2015, 59, 73-79.	3.9	18
480	An Energy-Efficient Design for ECG Recording and R-Peak Detection Based on Wavelet Transform. IEEE Transactions on Circuits and Systems II: Express Briefs, 2015, 62, 119-123.	2.2	58
481	Classification of ECG Signal Using Hybrid Feature Extraction and Neural Network Classifier. Lecture Notes in Electrical Engineering, 2015, , 1537-1544.	0.3	5
482	Classification of heart diseases from ECG signals using wavelet transform and kNN classifier. , 2015, , .		30
483	High-resolution detection of sustained ventricular and supraventricular tachycardia through FPGA-based fuzzy processing of ECG signal. Medical and Biological Engineering and Computing, 2015, 53, 1037-1047.	1.6	2
484	Prediction of ventricular tachycardia using morphological features of ECG signal. , 2015, , .		9
485	Predicting imminent episodes of ventricular tachyarrhythmia using an entropy-based feature in the EMD domain. , 2015, , .		0
486	Linear and nonlinear dynamics of heart rate variability in the process of exposure to 3600Åm in 10Åmin. Australasian Physical and Engineering Sciences in Medicine, 2015, 38, 263-270.	1.4	9
487	Envelopment filter and K-means for the detection of QRS waveforms in electrocardiogram. Medical Engineering and Physics, 2015, 37, 605-609.	0.8	49
488	A careful look at ECG sampling frequency and R-peak interpolation on short-term measures of heart rate variability. Physiological Measurement, 2015, 36, 1827-1852.	1.2	65
489	Heart rate estimation from non-cardiovascular signals using slope sum function and Teager energy. , 2015, , .		3
490	Experimental characterization of detecting and processing method for ECG applications. , 2015, , .		0
491	FPGA-based denoising and beat detection of the ECG signal. , 2015, , .		14
492	Electrocardiogram based classifier for driver drowsiness detection. , 2015, , .		20
493	Enabling R-peak detection in wearable ECG: Combining matched filtering and Hilbert transform. , 2015, , .		28

#	ARTICLE	IF	CITATIONS
494	De-noising of Electrocardiogram (ECG) with Adaptive Filter Using MATLAB. , 2015, , .		8
495	Novel Real-Time Low-Complexity QRS Complex Detector Based on Adaptive Thresholding. IEEE Sensors Journal, 2015, 15, 6036-6043.	2.4	111
496	Implementation of an algorithm for heart rate measurement in a specialized multi-core processor. , 2015, , .		1
497	Simple real-time QRS detector with the MaMeMi filter. Biomedical Signal Processing and Control, 2015, 21, 137-145.	3.5	63
498	A personal medical device for multi-sensor, remote vital signs collection in the elderly. , 2015, , .		6
499	Multimodal heart beat detection using signal quality indices. Physiological Measurement, 2015, 36, 1665-1677.	1.2	85
500	A Joint QRS Detection and Data Compression Scheme for Wearable Sensors. IEEE Transactions on Biomedical Engineering, 2015, 62, 165-175.	2.5	107
501	Effect of Multiscale PCA De-noising in ECG Beat Classification for Diagnosis of Cardiovascular Diseases. Circuits, Systems, and Signal Processing, 2015, 34, 513-533.	1.2	95
502	Wavelet Based Method for Congestive Heart Failure Recognition by Three Confirmation Functions. Computational and Mathematical Methods in Medicine, 2016, 2016, 1-11.	0.7	9
503	ECG Sensor Verification System with Mean-Interval Algorithm for Handling Sport Issue. Journal of Sensors, 2016, 2016, 1-12.	0.6	2
504	Design of a medical-grade QoS metric for wireless environments. Transactions on Emerging Telecommunications Technologies, 2016, 27, 1022-1029.	2.6	6
505	An accelerated framework for the classification of biological targets from solid-state micropore data. Computer Methods and Programs in Biomedicine, 2016, 134, 53-67.	2.6	3
506	Detection of heartbeats based on the Bayesian framework. , 2016, , .		1
507	A dedicated software environment for quantitative evaluation of various QRS detectors. , 2016, , .		0
508	ECG signal features extraction. , 2016, , .		7
509	QRS detector for maternal abdominal ECG. , 2016, , .		2
510	QRS complex detection using zero frequency filtering. , 2016, , .		0
511	Acceptable ECG trace selection based on Pan-Tompkins algorithm. , 2016, , .		0

#	ARTICLE	IF	CITATIONS
512	A feasible QRS detection algorithm for arrhythmia diagnosis. , 2016, , .		1
513	A novel stress measurement system with handheld electrodes in massage chairs. , 2016, , .		1
514	Detection of RR interval alterations in ECG signals by using first order fractional filter. , 2016, , .		4
515	Information-weighted Gaussian matrix in compressed sensing for ECG. , 2016, , .		1
516	The ecgFEAT toolbox for automated cardiovascular feature extraction and analysis. , 2016, , .		1
517	ECG denoising using weiner filter and adaptive least mean square algorithm. , 2016, , .		12
518	Autocorrelation algorithm for determining a pulse wave delay. , 2016, , .		4
519	A 410-nW efficient QRS processor for mobile ECG monitoring in 0.18- μ m CMOS. , 2016, , .		4
520	Energy-aware ECG sensing scheme for M-health applications. , 2016, , .		1
521	QRS Detection Algorithm for Telehealth Electrocardiogram Recordings. IEEE Transactions on Biomedical Engineering, 2016, 63, 1377-1388.	2.5	87
522	QRS Complex Detection in ECG Signals Using the Synchrosqueezed Wavelet Transform. IETE Journal of Research, 2016, 62, 885-892.	1.8	20
523	ECG segmentation and fiducial point extraction using multi hidden Markov model. Computers in Biology and Medicine, 2016, 79, 21-29.	3.9	32
524	Robust beat detection on noisy differential ECG. , 2016, , .		4
525	Analysis of various window techniques used for denoising ECG signal. , 2016, , .		8
526	Development of an Algorithm and a Sensor to Monitor the Heart Rate by Volumetric Measurement Techniques. Lecture Notes in Electrical Engineering, 2016, , 79-89.	0.3	2
527	Atrial fibrillation classification and association between the natural frequency and the autonomic nervous system. International Journal of Cardiology, 2016, 222, 504-508.	0.8	5
528	Technique for QRS complex detection using particle swarm optimisation. IET Science, Measurement and Technology, 2016, 10, 626-636.	0.9	31
529	An intelligent fitness diagnosis system using electroencephalogram with biomedical signals. IEEE Transactions on Electrical and Electronic Engineering, 2016, 11, 714-719.	0.8	1

#	ARTICLE	IF	CITATIONS
530	Extraction of QRS fiducial points from the ECG using adaptive mathematical morphology. , 2016, 56, 100-109.		69
531	Ultralow power processor employing block instruction for ECG applications. IEICE Electronics Express, 2016, 13, 20150493-20150493.	0.3	2
532	Anatomizing electrocardiogram using fractal features and GUI based detection of P and T waves. , 2016, , .		2
533	FPGA system for QRS complex detection based on difference operation method. Journal of the Chinese Institute of Engineers, Transactions of the Chinese Institute of Engineers, Series A/Chung-kuo Kung Ch'eng Hsueh K'an, 2016, 39, 833-840.	0.6	0
534	A novel approach to find out QRS complex for ECG signal. , 2016, , .		3
535	Probabilistic model-based approach for heart beat detection. Physiological Measurement, 2016, 37, 1404-1421.	1.2	9
536	Statistical Modeling of Electrocardiography Signal for Subject Monitoring and Diagnosis. , 0, , 95-126.		0
537	Robust QRS peak detection by multimodal information fusion of ECG and blood pressure signals. Physiological Measurement, 2016, 37, N84-N95.	1.2	6
538	Smart Helmet: Wearable Multichannel ECG and EEG. IEEE Journal of Translational Engineering in Health and Medicine, 2016, 4, 1-11.	2.2	66
540	Real Time QRS Detection Based on Redundant Discrete Wavelet Transform. IEEE Latin America Transactions, 2016, 14, 1662-1668.	1.2	20
541	ECG Signal Analysis and Arrhythmia Detection using Wavelet Transform. Journal of the Institution of Engineers (India): Series B, 2016, 97, 499-507.	1.3	47
542	Method for Detecting Ventricular Activity of ECG Using Adaptive Threshold. Journal of Medical and Biological Engineering, 2016, 36, 410-419.	1.0	2
543	A novel cardiovascular risk stratification model incorporating ECG and heart rate variability for patients presenting to the emergency department with chest pain. Critical Care, 2016, 20, 179.	2.5	26
544	An Accurate ECG-Based Transportation Safety Drowsiness Detection Scheme. IEEE Transactions on Industrial Informatics, 2016, 12, 1438-1452.	7.2	110
545	ECG denoising and fiducial point extraction using an extended Kalman filtering framework with linear and nonlinear phase observations. Physiological Measurement, 2016, 37, 203-226.	1.2	28
546	Machine Learning and Decision Support in Critical Care. Proceedings of the IEEE, 2016, 104, 444-466.	16.4	251
547	A robust QRS detection using novel pre-processing techniques and kurtosis based enhanced efficiency. Measurement: Journal of the International Measurement Confederation, 2016, 87, 194-204.	2.5	61
548	Human Age Recognition by Electrocardiogram Signal Based on Artificial Neural Network. Sensing and Imaging, 2016, 17, 1.	1.0	2

#	ARTICLE	IF	CITATIONS
549	Analysis of ECG Signals Using Advanced Wavelet Filtering Approach. Advances in Intelligent Systems and Computing, 2016, , 427-436.	0.5	0
550	An adaptive real-time beat detection method for continuous pressure signals. Journal of Clinical Monitoring and Computing, 2016, 30, 715-725.	0.7	1
551	Robust detection of heartbeats using association models from blood pressure and EEG signals. BioMedical Engineering OnLine, 2016, 15, 7.	1.3	7
552	Classification of ECG Signals Using Hybrid Feature Extraction and Classifier with Hybrid ABC-GA Optimization. Advances in Intelligent Systems and Computing, 2016, , 1003-1011.	0.5	1
553	ECG-based heartbeat classification for arrhythmia detection: A survey. Computer Methods and Programs in Biomedicine, 2016, 127, 144-164.	2.6	613
554	ECG Authentication for Mobile Devices. IEEE Transactions on Instrumentation and Measurement, 2016, 65, 591-600.	2.4	150
555	Comparative study of algorithms for ECG segmentation. Biomedical Signal Processing and Control, 2017, 34, 166-173.	3.5	56
556	Real time QRS complex detection using DFA and regular grammar. BioMedical Engineering OnLine, 2017, 16, 31.	1.3	18
557	ECG signal analysis using modified Sâ€transform. Healthcare Technology Letters, 2017, 4, 68-72.	1.9	17
558	Multiresolution wavelet transform based feature extraction and ECG classification to detect cardiac abnormalities. Measurement: Journal of the International Measurement Confederation, 2017, 108, 55-66.	2.5	177
559	Acquisition of electrocardiogram signals during magnetic resonance imaging. Physiological Measurement, 2017, 38, R119-R142.	1.2	22
560	Feature-based ECG sensing scheme for energy efficiency in WBSN. , 2017, , .		5
561	QRS complex detection in ECG signals using locally adaptive weighted total variation denoising. Computers in Biology and Medicine, 2017, 87, 187-199.	3.9	74
562	An efficient wavelet-based feature extraction scheme for electrocardiogram signals. , 2017, , .		1
563	Atrial fibrillation detection on compressed sensed ECG. Physiological Measurement, 2017, 38, 1405-1425.	1.2	17
564	Robust heart rate estimation from multimodal physiological signals using beat signal quality index based majority voting fusion method. Biomedical Signal Processing and Control, 2017, 33, 201-212.	3.5	23
565	Comparison of ECG fiducial point extraction methods based on dynamic Bayesian network. , 2017, , .		0
566	Effective Feature Extraction of ECG for Biometric Application. Procedia Computer Science, 2017, 115, 296-306.	1.2	29

#	ARTICLE	IF	CITATIONS
567	Motion artifact removal based on periodical property for ECG monitoring with wearable systems. Pervasive and Mobile Computing, 2017, 40, 267-278.	2.1	27
568	Identification of Elevated ST Segment and Deep Q Type MI Variant Using Cross Wavelet Transform and Hierarchical Classification From ECG Signals. Journal of Medical and Biological Engineering, 2017, 37, 492-507.	1.0	4
569	Denoising and Beat Detection of ECG Signal by Using FPGA. International Journal of High Speed Electronics and Systems, 2017, 26, 1740016.	0.3	6
570	QRS Complex Detection Based on Ensemble Empirical Mode Decomposition. Advances in Intelligent Systems and Computing, 2017, , 286-293.	0.5	3
571	A Fixed-Lag Kalman Smoother to Filter Power Line Interference in Electrocardiogram Recordings. IEEE Transactions on Biomedical Engineering, 2017, 64, 1852-1861.	2.5	31
572	DSP-based arrhythmia classification using wavelet transform and probabilistic neural network. Biomedical Signal Processing and Control, 2017, 32, 44-56.	3.5	91
573	Detection of heart disorders using an advanced intelligent swarm algorithm. Intelligent Automation and Soft Computing, 2017, 23, 419-424.	1.6	2
574	ECG databases for biometric systems: A systematic review. Expert Systems With Applications, 2017, 67, 189-202.	4.4	89
575	Using cloud models of heartbeats as the entity identifier to secure mobile devices. Journal of Medical Engineering and Technology, 2017, 41, 36-45.	0.8	0
577	Custom FPGA processing for real-time fetal ECG extraction and identification. Computers in Biology and Medicine, 2017, 80, 30-38.	3.9	13
578	A novel method for the detection of R-peaks in ECG based on K-Nearest Neighbors and Particle Swarm Optimization. Eurasip Journal on Advances in Signal Processing, 2017, 2017, .	1.0	29
579	Analysis of sampling frequency and resolution in ECG signals. , 2017, , .		19
580	Adaptive Fourier decomposition based R-peak detection for noisy ECG Signals. , 2017, 2017, 3501-3504.		7
581	Atrial fibrillation episodes detection based on classification of heart rate derived features. , 2017, , .		18
582	Toward Automated Analysis of Electrocardiogram Big Data by Graphics Processing Unit for Mobile Health Application. IEEE Access, 2017, 5, 17136-17148.	2.6	8
583	A 410-nW Efficient QRS Processor for Mobile ECG Monitoring in 0.18- μ m CMOS. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 1356-1365.	2.7	34
584	Effect of ECG signal gain on the detection accuracy of four common QRS detectors. , 2017, , .		1
585	Study of R peaks using HRV processor in MATLAB simulink. , 2017, , .		0

#	ARTICLE	IF	CITATIONS
586	Baseline drift correction and heart rate estimation using Histogram technique. , 2017, , .		0
587	Real-time prediction of altered states in Drone pilots using physiological signals. , 2017, , .		2
588	Detection of heart conditions using HRV processor in Matlab simulink. , 2017, , .		2
589	Electrocardiographic P-wave Delineation Based on Adaptive Slope Gaussian Detection. , 2017, , .		8
590	Early Seizure Detection Based on Cardiac Autonomic Regulation Dynamics. <i>Frontiers in Physiology</i> , 2017, 8, 765.	1.3	52
591	Patient-Specific Deep Architectural Model for ECG Classification. <i>Journal of Healthcare Engineering</i> , 2017, 2017, 1-13.	1.1	71
592	A Novel ECG Eigenvalue Detection Algorithm Based on Wavelet Transform. <i>BioMed Research International</i> , 2017, 2017, 1-12.	0.9	8
593	Shannon's Energy Based Algorithm in ECG Signal Processing. <i>Computational and Mathematical Methods in Medicine</i> , 2017, 2017, 1-16.	0.7	35
594	Probabilistic data fusion model for heart beat detection from multimodal physiological data. <i>Turkish Journal of Electrical Engineering and Computer Sciences</i> , 2017, 25, 449-460.	0.9	4
595	ECG beat quality assessment using Self Organizing Map. , 2017, , .		7
596	Design of a Wireless Sensor System with the Algorithms of Heart Rate and Agility Index for Athlete Evaluation. <i>Sensors</i> , 2017, 17, 2373.	2.1	14
597	An improved QRS complex detection method having low computational load. <i>Biomedical Signal Processing and Control</i> , 2018, 42, 230-241.	3.5	37
598	Design of a Biorthogonal Wavelet Transform Based R-Peak Detection and Data Compression Scheme for Implantable Cardiac Pacemaker Systems. <i>Journal of Medical Systems</i> , 2018, 42, 102.	2.2	38
599	Real-Time Multilead Convolutional Neural Network for Myocardial Infarction Detection. <i>IEEE Journal of Biomedical and Health Informatics</i> , 2018, 22, 1434-1444.	3.9	124
600	Design of High-Performance ECG Detector for Implantable Cardiac Pacemaker Systems using Biorthogonal Wavelet Transform. <i>Circuits, Systems, and Signal Processing</i> , 2018, 37, 3995-4014.	1.2	17
601	Design and Application of Electrocardiograph Diagnosis System Based on Multifractal Theory. <i>Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering</i> , 2018, , 433-447.	0.2	3
602	ECG fiducial point extraction using switching Kalman filter. <i>Computer Methods and Programs in Biomedicine</i> , 2018, 157, 129-136.	2.6	15
603	Unsupervised heart-rate estimation in wearables with Liquid states and a probabilistic readout. <i>Neural Networks</i> , 2018, 99, 134-147.	3.3	55

#	ARTICLE	IF	CITATIONS
604	From Pacemaker to Wearable: Techniques for ECG Detection Systems. Journal of Medical Systems, 2018, 42, 34.	2.2	55
605	An Efficient Noise Removal Technique Using Modified Error Normalized LMS Algorithm. The National Academy of Sciences, India, 2018, 41, 155-159.	0.8	16
606	Monitoring of fetal heart rate using sharp transition FIR filter. Biomedical Signal Processing and Control, 2018, 44, 191-199.	3.5	12
607	Dictionary-based monitoring of premature ventricular contractions: An ultra-low-cost point-of-care service. Artificial Intelligence in Medicine, 2018, 87, 91-104.	3.8	5
608	Robust QRS detection for HRV estimation from compressively sensed ECG measurements for remote health-monitoring systems. Physiological Measurement, 2018, 39, 035002.	1.2	5
609	Validity of P-peak to R-peak interval compared to classical PR-interval to assess dynamic beat-to-beat AV conduction variability on surface electrocardiogram. Biomedical Physics and Engineering Express, 2018, 4, 035037.	0.6	1
610	Low-power perceptron model based ECG processor for premature ventricular contraction detection. Microprocessors and Microsystems, 2018, 59, 29-36.	1.8	10
611	A novel LMS algorithm for ECG signal preprocessing and KNN classifier based abnormality detection. Multimedia Tools and Applications, 2018, 77, 10365-10374.	2.6	93
612	Cardiac arrhythmia classification using multi-granulation rough set approaches. International Journal of Machine Learning and Cybernetics, 2018, 9, 651-666.	2.3	8
613	A Novel Short-Term Event Extraction Algorithm for Biomedical Signals. IEEE Transactions on Biomedical Engineering, 2018, 65, 754-762.	2.5	41
614	A new method for QRS detection in ECG signals using QRS-preserving filtering techniques. Biomedizinische Technik, 2018, 63, 207-217.	0.9	9
615	Body Sensors and Electrocardiography. SpringerBriefs in Applied Sciences and Technology, 2018, , .	0.2	16
616	A robust QRS complex detection using regular grammar and deterministic automata. Biomedical Signal Processing and Control, 2018, 40, 263-274.	3.5	18
617	Matched Filtering for Heart Rate Estimation on Compressive Sensing ECG Measurements. IEEE Transactions on Biomedical Engineering, 2018, 65, 1349-1358.	2.5	44
619	Classification of heart signal using wavelet haar and backpropagation neural network. IOP Conference Series: Materials Science and Engineering, 2018, 403, 012069.	0.3	0
620	ECG Signal Processing in MatDeck. , 2018, , .		0
621	R-peak Extraction for Wireless ECG Monitoring System. , 2018, , .		2
622	Detection of ECG Fiducial Points using Moving Average Filters for Diagnosis of Cardiac Disease. , 2018, , .		0

#	ARTICLE	IF	CITATIONS
623	ECG-Derived Respiration Using a Real-Time QRS Detector Based on Empirical Mode Decomposition. , 2018, , .		4
624	Compression of Multilead Electrocardiogram Using Principal Component Analysis and Machine Learning Approach. , 2018, , .		7
625	QRS Complex Detection Based on Smoothed Nonlinear Energy Operator. , 2018, , .		1
626	ECG Heart Beat Detection Using Modified Slope Sum Function and Teager-Kaiser Energy Method. , 2018, , .		1
627	Automated QRS complex detection using MFO-based DFOD. IET Signal Processing, 2018, 12, 1172-1184.	0.9	14
628	Real-Time ECG Delineation with Randomly Selected Wavelet Transform Feature and Random Walk Estimation. , 2018, 2018, 1-4.		9
629	Parameter Extraction of ECG Using Labview. , 2018, , .		1
630	Waveform prototype-based feature learning for automatic detection of the early repolarization pattern in ECG signals. Physiological Measurement, 2018, 39, 115010.	1.2	0
631	Implementation of Artificial Neural Network on Raspberry Pi for Signal Processing Applications. , 2018, , .		6
632	A wavelet-based method for power-line interference removal in ECG signals. Research on Biomedical Engineering, 2018, 34, 73-86.	1.5	26
633	Amplitude Rescaling Influence on QRS Detection. Communications in Computer and Information Science, 2018, , 259-272.	0.4	1
634	Baseline Wander Correction in Pulse Waveforms Using Wavelet-Based Cascaded Adaptive Filter. , 2018, , 65-90.		1
635	Design of Smart Electrocardiography (ECG) Using Modified K-Nearest Neighbor (MKNN). , 2018, , .		3
636	A Novel R Peak Detection Method for Mobile Environments. IEEE Access, 2018, 6, 51227-51237.	2.6	22
637	A Multilead QRS Complex Detection Method on 12-Lead Electrocardiogram Signals. , 0, , .		0
638	POMS 2018 Sponsors. , 2018, , .		0
639	Windowed State-Space Filters for Signal Detection and Separation. IEEE Transactions on Signal Processing, 2018, 66, 3768-3783.	3.2	9
640	Performance Analysis of Ten Common QRS Detectors on Different ECG Application Cases. Journal of Healthcare Engineering, 2018, 2018, 1-8.	1.1	73

#	ARTICLE	IF	CITATIONS
641	High sensitivity experimental QRS detector. , 2018, , .		2
642	Robust heartbeat detection using multimodal recordings and ECG quality assessment with signal amplitudes dispersion. Computer Methods and Programs in Biomedicine, 2018, 163, 169-182.	2.6	6
643	Optimal DSP bandpass filtering for QRS detection. , 2018, , .		4
644	Simultaneous monitoring of motion ECG of two subjects using Bluetooth Piconet and baseline drift. Biomedical Engineering Letters, 2018, 8, 365-371.	2.1	2
645	ECG Delineation with Randomly Selected Wavelet Feature and Random Forest Classifier. IEICE Transactions on Information and Systems, 2018, E101.D, 2082-2091.	0.4	3
646	Towards a Physiologically-Aware Architecture for Transmission of Biomedical Signals in BASNs/IoT. , 2018, , .		4
647	On the Beat Detection Performance in Long-Term ECG Monitoring Scenarios. Sensors, 2018, 18, 1387.	2.1	11
648	Routing Protocols for Underwater Wireless Sensor Networks: Taxonomy, Research Challenges, Routing Strategies and Future Directions. Sensors, 2018, 18, 1619.	2.1	66
649	A Real-time QRS Detector Based on Low-pass Differentiator and Hilbert Transform. MATEC Web of Conferences, 2018, 175, 02008.	0.1	4
650	Development of a combined time-frequency technique for accurate extraction of pNN50 metric from noisy heart rate measurements. International Journal of Intelligent Robotics and Applications, 2018, 2, 193-208.	1.6	2
651	Dynamic ECG Signal Quality Evaluation Based on the Generalized bSQI Index. IEEE Access, 2018, 6, 41892-41902.	2.6	19
652	Early Diagnosis and Automated Analysis of Myocardial Infarction (STEMI) by Detection of ST Segment Elevation Using Wavelet Transform and Feature Extraction. , 2018, , .		2
653	Design of high performance QRS complex detector for wearable healthcare devices using biorthogonal spline wavelet transform. ISA Transactions, 2018, 81, 222-230.	3.1	21
654	Design of wavelet transform based electrocardiogram monitoring system. ISA Transactions, 2018, 80, 381-398.	3.1	51
655	Real-time premature ventricular contractions detection based on Redundant Discrete Wavelet Transform. Research on Biomedical Engineering, 2018, 34, 187-197.	1.5	10
656	A Highly Adaptive Lossless ECG Compression ASIC for Wireless Sensors Based on Hybrid Gomlomb Coding. IEICE Transactions on Information and Systems, 2018, E101.D, 791-794.	0.4	0
657	QRS Complex Detection and Measurement Algorithms for Multichannel ECGs in Cardiac Resynchronization Therapy Patients. IEEE Journal of Translational Engineering in Health and Medicine, 2018, 6, 1-11.	2.2	14
658	An Efficient QRS Complex Detection Using Optimally Designed Digital Differentiator. Circuits, Systems, and Signal Processing, 2019, 38, 716-749.	1.2	23

#	ARTICLE	IF	CITATIONS
659	Robust Heartbeat Detection From Multimodal Data via CNN-Based Generalizable Information Fusion. IEEE Transactions on Biomedical Engineering, 2019, 66, 710-717.	2.5	73
660	Low-Energy ECG Processing for Accurate Features' Extraction in Wireless Body Sensor Networks. , 2019, , .		3
661	Individually Rate Corrected QTc Intervals in Children and Adolescents. Frontiers in Physiology, 2019, 10, 994.	1.3	16
662	Analysis of a Differential Noise Detection Filter in ECG Signals. , 2019, , .		3
663	Impact of ECG Dataset Diversity on Generalization of CNN Model for Detecting QRS Complex. IEEE Access, 2019, 7, 93275-93285.	2.6	25
664	An Efficient and Robust Digital Fractional Order Differentiator Based ECG Pre-Processor Design for QRS Detection. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 682-696.	2.7	47
666	Abnormalities State Detection from P-Wave, QRS Complex, and T-Wave in Noisy ECG. Journal of Physics: Conference Series, 2019, 1230, 012015.	0.3	9
667	Theory and Applications of Time Series Analysis. Contributions To Statistics, 2019, , .	0.2	3
668	Machine Learning and Medical Engineering for Cardiovascular Health and Intravascular Imaging and Computer Assisted Stenting. Lecture Notes in Computer Science, 2019, , .	1.0	2
669	Assessment of automatic strategies for combining QRS detections by multiple algorithms in multiple leads. Physiological Measurement, 2019, 40, 114002.	1.2	3
670	ECG delineation using a piecewise Gaussian derivative model with parameters estimated from scale-dependent algebraic expressions. , 2019, 2019, 5633-5637.		4
671	Multiple Physiological Signals Fusion Techniques for Improving Heartbeat Detection: A Review. Sensors, 2019, 19, 4708.	2.1	19
672	FPGA-based system for heart rate monitoring. IET Circuits, Devices and Systems, 2019, 13, 771-782.	0.9	18
673	Robust, real-time generic detector based on a multi-feature probabilistic method. PLoS ONE, 2019, 14, e0223785.	1.1	13
674	Improving the detection of underwater metal-containing objects by fusion of ferromagnetic sensors data with vehicle's navigational data. IOP Conference Series: Earth and Environmental Science, 2019, 302, 012159.	0.2	0
675	Time-Domain Multi-Level R-Peak Detection Algorithm for ECG Signal Processing. , 2019, , .		3
676	Automation algorithm to detect and quantify Electrocardiogram waves and intervals. Procedia Computer Science, 2019, 151, 941-946.	1.2	5
677	ENHANCED DYNAMIC THRESHOLD ALGORITHM OF QRS COMPLEX DETECTION. Biomedical Engineering - Applications, Basis and Communications, 2019, 31, 1950014.	0.3	1

#	ARTICLE	IF	CITATIONS
678	QRS complex detection using fractional Stockwell transform and fractional Stockwell Shannon energy. Biomedical Signal Processing and Control, 2019, 54, 101628.	3.5	18
679	A novel compression framework using energy-sensitive QRS complex detection method for a mobile ECG. Science China Information Sciences, 2019, 62, 1.	2.7	4
680	Non-linear model for pseudo CMOS resistors addressing the recovery time in bio-amplifiers. Semiconductor Science and Technology, 2019, 34, 075032.	1.0	1
681	A Novel Wavelet-Based Algorithm for Detection of QRS Complex. Applied Sciences (Switzerland), 2019, 9, 2142.	1.3	26
682	On moment of velocity for signal analysis. Royal Society Open Science, 2019, 6, 182001.	1.1	3
683	A review of automated sleep stage scoring based on physiological signals for the new millennia. Computer Methods and Programs in Biomedicine, 2019, 176, 81-91.	2.6	104
684	A statistical designing approach to MATLAB based functions for the ECG signal preprocessing. Iran Journal of Computer Science, 2019, 2, 167-178.	1.8	12
685	Automatic QRS Onset Detection of ECG Signal using Secant Line Slope Formula. , 2019, , .		2
686	An Improved Sliding Window Area Method for T Wave Detection. Computational and Mathematical Methods in Medicine, 2019, 2019, 1-11.	0.7	9
687	Improving the QRS detection for one-channel ECG sensor. Technology and Health Care, 2019, 27, 623-642.	0.5	10
688	Embedded Solution for Atrial Fibrillation Detection Using Smart Wireless Body Sensors. IEEE Sensors Journal, 2019, 19, 5740-5750.	2.4	10
689	QRS Detection in ECG Signal with Convolutional Network. Lecture Notes in Computer Science, 2019, , 802-809.	1.0	10
690	Bayesian Real-Time QRS Complex Detector for Healthcare System. IEEE Internet of Things Journal, 2019, 6, 5540-5549.	5.5	12
691	Centralized Wavelet Multiresolution for Exact Translation Invariant Processing of ECG Signals. IEEE Access, 2019, 7, 42322-42330.	2.6	14
693	Biomedical Signals. , 2019, , 27-87.		16
694	Segmentation of the ECG Signal by Means of a Linear Regression Algorithm. Sensors, 2019, 19, 775.	2.1	35
695	Evaluation of Energy Power Spectral Distribution of QRS Complex for Detection of Cardiac Arrhythmia. Lecture Notes in Electrical Engineering, 2019, , 99-109.	0.3	0
696	Fixed-Point Accuracy Analysis of 2D FFT for the Creation of Computer Generated Holograms. , 2019, , .		2

#	ARTICLE	IF	CITATIONS
697	PV,Battery and Ultra-capacitor Based Hybrid Energy Storage System. , 2019, , .		6
698	Computation of Strain in Deformed Pearlitic Steel Using Digital Image Correlation Technique. , 2019, , .		0
699	Super-Resolution Direction-of-Arrival Estimation based on Multiplicative Array Processing. , 2019, , .		0
700	Global Independence, Possible Local Dependence: Towards More Realistic Error Estimates for Indirect Measurements. , 2019, , .		4
701	Estimation of Geophone Orientation Using Source of Opportunity. , 2019, , .		2
702	Prying into Private Spaces Using Mobile Device Motion Sensors. , 2019, , .		2
703	Towards High Energy Efficiency in the Internet of Things. , 2019, , .		0
704	Optimal Temporal Logic Planning for Multi-Robot Systems in Uncertain Semantic Maps. , 2019, , .		10
705	Scheduling method of maintenance support resource with task timing constraint. , 2019, , .		0
706	Relations between Femininity and the Movements in Japanese Traditional Dance. , 2019, , .		2
707	Analysis of the Impact of Different Reactive Power Compensation Devices on HVDC System Rectifier Station Power System Automation. , 2019, , .		1
708	An assistive low-vision platform that augments spatial cognition through proprioceptive guidance: Point-to-Tell-and-Touch. , 2019, , .		3
709	REWARD: Design, Optimization, and Evaluation of a Real-Time Relative-Energy Wearable R-Peak Detection Algorithm. , 2019, 2019, 3341-3347.		12
710	Improving Arabic Stemmer: ISRI Stemmer. , 2019, , .		1
711	Assessing Context-Aware Data Consistency. , 2019, , .		2
712	Investigation Reinforcement Learning Method for R-Wave Detection on Electrocardiogram Signal. , 2019, , .		3
713	What Motivates Learners' Intention to Use Blackboard Mobile Learning (BML)?: Evidence from Thailand. , 2019, , .		1
714	Fusion of fluxgate sensors with navigational data for the improvement of the detection of underwater metal-containing objects. , 2019, , .		0

#	ARTICLE	IF	CITATIONS
715	Localization of Steady Sound Source and Direction Detection of Moving Sound Source using CNN. , 2019, , .		4
716	SiO ₂ /SiN membranes as MEMS Pirani gauges for wide pressure measurement range. , 2019, , .		2
717	A Health Indicator Construction Method based on Deep Belief Network for Remaining Useful Life Prediction. , 2019, , .		1
718	A First Derivative Based R-Peak Detection and DWT Based Beat Delineation Approach of Single Lead Electrocardiogram Signal. , 2019, , .		4
719	Fast Global Active Contour Model with Local Information. , 2019, , .		1
720	A Spatio-Temporal Flow Model of Dockless Shared Bikes. , 2019, , .		1
721	Optimization and Calorimetric Analysis of Axial Flux Permanent Magnet Motor for Implantable Blood Pump Assisting the Fontan Circulation. , 2019, , .		1
722	A Bot for Suggesting Questions That Match Each User's Expertise. , 2019, , .		1
723	Use oneâ€bit technique to measure the coherence in the time, frequency and space domain in a reverberation chamber. IET Microwaves, Antennas and Propagation, 2019, 13, 2632-2635.	0.7	1
724	A Free and Open Source Toolbox based on Mathematica for Power System Analysis. , 2019, , .		1
725	Zero Voltage Vector - Based Predictive Direct Torque Control for PMSM. , 2019, , .		0
726	Acoustic Sensing as a Novel Wearable Approach for Cardiac Monitoring at the Wrist. Scientific Reports, 2019, 9, 20079.	1.6	25
727	VHDL Module for the R Wave Detection in Real Time Using Continuous Wavelet Transform. , 2019, , .		5
728	Inter-Patient CNN-LSTM for QRS Complex Detection in Noisy ECG Signals. IEEE Access, 2019, 7, 169359-169370.	2.6	30
729	Advanced P Wave Detection in Ecg Signals During Pathology: Evaluation in Different Arrhythmia Contexts. Scientific Reports, 2019, 9, 19053.	1.6	22
730	Fusion Algorithm for Accurate Delineation of QRS Complex in ECG Signal. Circuits, Systems, and Signal Processing, 2019, 38, 1811-1832.	1.2	2
731	Matching Pursuit Decomposition on Electrocardiograms for Joint Compression and QRS Detection. Circuits, Systems, and Signal Processing, 2019, 38, 2653-2676.	1.2	3
732	Parameter Estimation Based on Scale-Dependent Algebraic Expressions and Scale-Space Fitting. IEEE Transactions on Signal Processing, 2019, 67, 1431-1446.	3.2	5

#	ARTICLE	IF	CITATIONS
733	Techniques for QRS Complex Detection. , 2019, , 89-118.		2
734	Delineation of QRS Complex: Challenges for the Development of Widely Applicable Algorithms. , 2019, , 119-139.		0
735	Optimal SSA-based wideband digital differentiator design for cardiac QRS complex detection application. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2019, 32, e2524.	1.2	15
736	R-Peaks Detection Using Shannon Energy for HRV Analysis. Lecture Notes in Electrical Engineering, 2019, , 401-409.	0.3	2
737	Removal of Movement Artefact for Mobile EEG Analysis in Sports Exercises. IEEE Access, 2019, 7, 7206-7217.	2.6	48
738	An optimally designed digital differentiator based preprocessor for R-peak detection in electrocardiogram signal. Biomedical Signal Processing and Control, 2019, 49, 440-464.	3.5	32
739	Efficient QRS complex detection algorithm based on Fast Fourier Transform. Biomedical Engineering Letters, 2019, 9, 145-151.	2.1	31
740	FPGA implementation of modified error normalized LMS adaptive filter for ECG noise removal. Cluster Computing, 2019, 22, 12233-12241.	3.5	33
741	Fast QRS Detection and ECG Compression Based on Signal Structural Analysis. IEEE Journal of Biomedical and Health Informatics, 2019, 23, 123-131.	3.9	55
742	A Novel Parametric Deformable Model Based on Calculus of Variations for QRS Detection. Iranian Journal of Science and Technology, Transaction A: Science, 2019, 43, 1101-1107.	0.7	6
743	Cloud-based health monitoring framework using smart sensors and smartphone. , 2020, , 217-243.		7
744	Online robust R-peaks detection in noisy electrocardiograms using a novel iterative smart processing algorithm. Applied Mathematics and Computation, 2020, 369, 124839.	1.4	13
745	Machine Learning Approach to Detect Cardiac Arrhythmias in ECG Signals: A Survey. Irbm, 2020, 41, 185-194.	3.7	77
746	A Kalman filtering based adaptive threshold algorithm for QRS complex detection. Biomedical Signal Processing and Control, 2020, 58, 101827.	3.5	26
747	A photoplethysmography smartphone-based method for heart rate variability assessment: device model and breathing influences. Biomedical Signal Processing and Control, 2020, 57, 101717.	3.5	11
748	Implementation of a patient-specific cardiac model. , 2020, , 43-94.		1
750	Analysis of Pan-Tompkins Algorithm Performance with Noisy ECG Signals. Journal of Physics: Conference Series, 2020, 1532, 012022.	0.3	34
751	Automated QT Interval Measurement Using Modified Pan-Tompkins Algorithm with Independent Isoelectric Line Approach. Journal of Biomimetics, Biomaterials and Biomedical Engineering, 2020, 44, 51-61.	0.5	0

#	ARTICLE	IF	CITATIONS
752	A Real Time QRS Detection Algorithm Based on ET and PD Controlled Threshold Strategy. <i>Sensors</i> , 2020, 20, 4003.	2.1	21
753	Exploratory data analysis based efficient QRS-complex detection technique with minimal computational load. <i>Physical and Engineering Sciences in Medicine</i> , 2020, 43, 1049-1067.	1.3	12
754	A robust approach to denoise ECG signals based on fractional Stockwell transform. <i>Biomedical Signal Processing and Control</i> , 2020, 62, 102090.	3.5	14
755	Active Stacking for Heart Rate Estimation. , 2020, , .		1
756	A multi-scale approach for testing and detecting peaks in time series. <i>Statistics</i> , 2020, 54, 1058-1080.	0.3	3
757	Machine Learning based Cardiac Arrhythmia detection from ECG signal. , 2020, , .		17
758	Modeling and Reconstructing Textile Sensor Noise: Implications for Wearable Technology. , 2020, 2020, 4563-4566.		2
759	Online Model-Based Beat-by-beat Heart Rate Estimation. , 2020, , .		0
760	Detecting Noisy ECG QRS Complexes Using WaveletCNN Autoencoder and ConvLSTM. <i>IEEE Access</i> , 2020, 8, 143802-143817.	2.6	9
761	A Paced-ECG Detector and Delineator for Automatic Multi-Parametric Catheter Mapping of Ventricular Tachycardia. <i>IEEE Access</i> , 2020, 8, 223952-223960.	2.6	1
762	Platform for Analysis and Labeling of Medical Time Series. <i>Sensors</i> , 2020, 20, 7302.	2.1	7
763	Online Signal Monitoring With Bounded Lag. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2020, 39, 3868-3880.	1.9	13
764	Heart Rate Detection on Single-Arm ECG by Using Dual-Median Approach. <i>Arabian Journal for Science and Engineering</i> , 2020, 45, 6573-6581.	1.7	1
765	Optimized time-frequency features and semi-supervised SVM to heartbeat classification. <i>Signal, Image and Video Processing</i> , 2020, 14, 1471-1478.	1.7	7
766	Prediction of mortality from 12-lead electrocardiogram voltage data using a deep neural network. <i>Nature Medicine</i> , 2020, 26, 886-891.	15.2	168
767	Robust identification of QRS-complexes in electrocardiogram signals using a combination of interval and trigonometric threshold values. <i>Biomedical Signal Processing and Control</i> , 2020, 61, 102007.	3.5	12
768	An Analysis of the Effects of Noisy Electrocardiogram Signal on Heartbeat Detection Performance. <i>Bioengineering</i> , 2020, 7, 53.	1.6	17
769	Delineation of Electrocardiograms Using Multiscale Parameter Estimation. <i>IEEE Journal of Biomedical and Health Informatics</i> , 2020, 24, 2216-2229.	3.9	14

#	ARTICLE	IF	CITATIONS
770	Multichannel ECG recording from waist using textile sensors. BioMedical Engineering OnLine, 2020, 19, 48.	1.3	23
771	Semantic based Clinical Notes Mining for Factual Information Extraction. , 2020, , .		1
772	A Generic Design of Driver Drowsiness and Stress Recognition Using MOGA Optimized Deep MKL-SVM. Sensors, 2020, 20, 1474.	2.1	27
773	ECG heartbeat classification by means of variable rational projection. Biomedical Signal Processing and Control, 2020, 61, 102034.	3.5	6
774	Effects of Electrons on the Propagation of Bernstein Waves in a Nonrelativistic Symmetric and Asymmetric Pair Ion Plasma. IEEE Transactions on Plasma Science, 2020, 48, 643-646.	0.6	1
775	An adaptive QRS detection algorithm for ultra-long-term ECG recordings. Journal of Electrocardiology, 2020, 60, 165-171.	0.4	12
776	Computer Aided Diagnosis for atrial fibrillation based on new artificial adaptive systems. Computer Methods and Programs in Biomedicine, 2020, 191, 105401.	2.6	29
777	Adversarial Attacks for Image Segmentation on Multiple Lightweight Models. IEEE Access, 2020, 8, 31359-31370.	2.6	15
778	High-Capacity Super-Channel-Enabled Multi-Core Fiber Optical Switching System for Converged Inter/Intra Data Center and Edge Optical Networks. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-13.	1.9	10
779	Energy Collaboration for Non-Homogeneous Energy Harvesting in Cooperative Wireless Sensor Networks. IEEE Access, 2020, 8, 27027-27037.	2.6	6
780	An Improved Method with High Anti-interference Ability for R Peak Detection in Wearable Devices. Irbm, 2020, 41, 172-183.	3.7	4
781	Real-Time Quality Assessment of Long-Term ECG Signals Recorded by Wearables in Free-Living Conditions. IEEE Transactions on Biomedical Engineering, 2020, 67, 2721-2734.	2.5	45
782	An Efficient Architecture for QRS Detection in FPGA Using Integer Haar Wavelet Transform. Circuits, Systems, and Signal Processing, 2020, 39, 3610-3625.	1.2	13
783	Adaptive Sampling of the Electrocardiogram Based on Generalized Perceptual Features. Sensors, 2020, 20, 373.	2.1	10
784	A Wavelet Denoising and Teager Energy Operator-Based Method for Automatic QRS Complex Detection in ECG Signal. Circuits, Systems, and Signal Processing, 2020, 39, 4943-4979.	1.2	10
785	Simulation of Solar Energy Photovoltaic Conversion. , 2020, , .		9
786	ECG-Based Human Identification System by Temporal-Amplitude Combined Feature Vectors. IEEE Access, 2020, 8, 42217-42230.	2.6	8
787	Deep convolutional neural network application to classify the ECG arrhythmia. Signal, Image and Video Processing, 2020, 14, 1431-1439.	1.7	19

#	ARTICLE	IF	CITATIONS
788	Preliminary Comparison of Zero-Gravity Chair With Tilt Table in Relation to Heart Rate Variability Measurements. IEEE Journal of Translational Engineering in Health and Medicine, 2020, 8, 1-8.	2.2	0
789	NCFET to Rescue Technology Scaling: Opportunities and Challenges. , 2020, , .		9
790	Sea Ice Thickness Detection Using Coastal BeiDou Reflection Setup in Bohai Bay. IEEE Geoscience and Remote Sensing Letters, 2021, 18, 381-385.	1.4	8
791	Recourse-Cost Constrained Robust Optimization for Microgrid Dispatch With Correlated Uncertainties. IEEE Transactions on Industrial Electronics, 2021, 68, 2266-2278.	5.2	43
792	Multichannel Esophageal Heart Rate Monitoring of Preterm Infants. IEEE Transactions on Biomedical Engineering, 2021, 68, 1903-1912.	2.5	6
793	Quality Aware Compression of Multilead Electrocardiogram Signal using 2-mode Tucker Decomposition and Steganography. Biomedical Signal Processing and Control, 2021, 64, 102230.	3.5	8
794	Automatic Detection of QRS Complexes Using Dual Channels Based on U-Net and Bidirectional Long Short-Term Memory. IEEE Journal of Biomedical and Health Informatics, 2021, 25, 1052-1061.	3.9	26
795	A Multistage Algorithm Design for Electrocardiogram Signal Denoising. Journal of Circuits, Systems and Computers, 2021, 30, 2150061.	1.0	4
796	A Graphical User Interface Based Heart Rate Monitoring Process and Detection of PQRST Peaks from ECG Signal. Lecture Notes in Networks and Systems, 2021, , 481-496.	0.5	12
797	Measurement and analysis of heart rate variability. , 2021, , 145-173.		0
798	A Novel Method of QRS Detection Using Time and Amplitude Thresholds With Statistical False Peak Elimination. IEEE Access, 2021, 9, 46079-46092.	2.6	20
799	Classification of diagnostic features of transient signals in the electric power industry. E3S Web of Conferences, 2021, 288, 01036.	0.2	1
800	Long Short-Term Memory Networks for Driver Drowsiness and Stress Prediction. Advances in Intelligent Systems and Computing, 2021, , 670-680.	0.5	3
801	Choosing the Appropriate QRS Detector. , 2021, , .		2
802	A Dynamically Reconfigurable ECG Analog Front-End With a 2.5Å— Data-Dependent Power Reduction. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 1066-1078.	2.7	8
803	Portable Heartbeat Rate Monitoring System by WSN Using LABVIEW. International Journal of Computing and Digital Systems, 2021, 10, 353-360.	0.5	4
805	A QRS-Detection Algorithm for Real-Time Applications. International Journal of Intelligent Engineering and Systems, 2021, 14, 356-367.	0.8	1
806	Results of measurements of the cardiac micropotential energies in the amplitude-time intervals recorded by the nanosensor-based hardware and software complex. Measurement: Journal of the International Measurement Confederation, 2021, 173, 108600.	2.5	2

#	ARTICLE	IF	CITATIONS
807	PulSync: The Heart Rate Variability as a Unique Fingerprint for the Alignment of Sensor Data Across Multiple Wearable Devices. , 2021, , .		1
808	Algorithms for Determining The Essential Features of The Travelling Wave for Fault Location Purpose. , 2021, , .		1
809	DCAECSCS: Divide and Conquer Algorithm Based Electro Cardiac Signal Compression Scheme. IOP Conference Series: Materials Science and Engineering, 2021, 1084, 012008.	0.3	1
810	Identification of QRS Segments of Electrocardiogram signals using Feature Extraction. , 2021, , .		0
811	Chaos Theory and ARTFA: Emerging Tools for Interpreting ECG Signals to Diagnose Cardiac Arrhythmias. Wireless Personal Communications, 2021, 118, 3615-3646.	1.8	51
812	Diagnostic Interpretation of Non-Uniformly Sampled Electrocardiogram. Sensors, 2021, 21, 2969.	2.1	1
813	Investigating Nuisance Effects Induced in EEG During tACS Application. Frontiers in Human Neuroscience, 2021, 15, 637080.	1.0	2
814	Localization of myocardial infarction with multi-lead ECG based on DenseNet. Computer Methods and Programs in Biomedicine, 2021, 203, 106024.	2.6	29
815	Moving average and standard deviation thresholding (MAST): a novel algorithm for accurate R-wave detection in the murine electrocardiogram. Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology, 2021, 191, 1071-1083.	0.7	1
816	The Different Facets of Heart Rate Variability in Obstructive Sleep Apnea. Frontiers in Psychiatry, 2021, 12, 642333.	1.3	26
817	QRS Detection Based on Medical Knowledge and Cascades of Moving Average Filters. Applied Sciences (Switzerland), 2021, 11, 6995.	1.3	7
818	Certainty in QRS detection with artificial neural networks. Biomedical Signal Processing and Control, 2021, 68, 102628.	3.5	5
819	A signal quality assessment-based ECG waveform delineation method used for wearable monitoring systems. Medical and Biological Engineering and Computing, 2021, 59, 2073-2084.	1.6	10
820	Extended-Range Prediction Model Using NSGA-III Optimized RNN-GRU-LSTM for Driver Stress and Drowsiness. Sensors, 2021, 21, 6412.	2.1	16
821	Embedded Algorithm for QRS Detection Based on Signal Shape. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-12.	2.4	20
822	Novel Approach to Denoise Electrocardiogram Signal Using LabVIEW Techniques. Lecture Notes in Electrical Engineering, 2021, , 247-260.	0.3	0
823	R-R Interval Estimation for Wearable Electrocardiogram Based on Single Complex Wavelet Filtering and Morphology-Based Peak Selection. IEEE Access, 2021, 9, 60802-60827.	2.6	6
824	A Multimodal Data Fusion Technique for Heartbeat Detection in Wearable IoT Sensors. IEEE Internet of Things Journal, 2022, 9, 2071-2082.	5.5	15

#	ARTICLE	IF	CITATIONS
825	Acoustic Sensing as a Novel Wearable Approach for Heart Rate Variability Monitoring at the Wrist. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-12.	2.4	2
826	Context-Aware Computing Based Adaptable Heart Diseases Diagnosis Algorithm. Lecture Notes in Computer Science, 2005, , 284-290.	1.0	2
827	Human++: Emerging Technology for Body Area Networks. , 2008, , 377-397.		12
828	Advances Toward Closed-Loop Deep Brain Stimulation. Springer Optimization and Its Applications, 2010, , 227-253.	0.6	2
830	Diagnosing Cardiac Abnormalities from 12-Lead Electrocardiograms Using Enhanced Deep Convolutional Neural Networks. Lecture Notes in Computer Science, 2019, , 36-44.	1.0	4
831	Textile Building Blocks: Toward Simple, Modularized, and Standardized Smart Textile. Human-computer Interaction Series, 2017, , 303-331.	0.4	15
832	Principal Point Discrimination of Electrocardiogram for Automatic Diagnosis. , 2007, , 1087-1090.		1
833	Embedded Real-Time Heart Variability Analysis. , 2007, , 128-132.		6
834	A Real-Time Adaptive Wavelet Transform-Based QRS Complex Detector. Lecture Notes in Computer Science, 2007, , 281-289.	1.0	12
835	A mobile ECG monitoring system with context collection. IFMBE Proceedings, 2009, , 1222-1225.	0.2	13
837	Sleep Evaluation Device for Home-Care. Advances in Intelligent and Soft Computing, 2010, , 367-378.	0.2	8
838	Data Integration in Multimodal Home Care Surveillance and Communication System. Advances in Intelligent and Soft Computing, 2010, , 391-402.	0.2	10
840	Wearable Patient Home Monitoring Based on ECG and ACC Sensors. IFMBE Proceedings, 2011, , 941-944.	0.2	14
841	Photoplethysmogram Processing Using an Adaptive Single Frequency Phase Vocoder Algorithm. Communications in Computer and Information Science, 2013, , 31-42.	0.4	2
842	Online and Offline Determination of QT and PR Interval and QRS Duration in Electrocardiography. Lecture Notes in Computer Science, 2013, , 1-15.	1.0	13
843	Fast Data-Driven Calibration of a Cardiac Electrophysiology Model from Images and ECG. Lecture Notes in Computer Science, 2013, 16, 1-8.	1.0	8
844	Low Power Implementation of ECG R-wave Peak Detector in 180 nm CMOS Process. , 2020, , .		1
846	Robust ECG R-peak detection using LSTM. , 2020, , .		32

#	ARTICLE	IF	CITATIONS
847	Hilbert Transform Based Adaptive ECG R-Peak Detection Technique. International Journal of Electrical and Computer Engineering, 2012, 2, .	0.5	7
848	Analysis of Computer Aided Identification System for ECG Characteristic Points. International Journal of Biomedical Science and Engineering, 2015, 3, 49.	0.1	6
849	An Open-Access ECG Database for Algorithm Evaluation of QRS Detection and Heart Rate Estimation. Journal of Medical Imaging and Health Informatics, 2019, 9, 1853-1858.	0.2	36
850	Simple and Robust Realtime QRS Detection Algorithm Based on Spatiotemporal Characteristic of the QRS Complex. PLoS ONE, 2016, 11, e0150144.	1.1	35
851	Beat-ID: Towards a computationally low-cost single heartbeat biometric identity check system based on electrocardiogram wave morphology. PLoS ONE, 2017, 12, e0180942.	1.1	32
852	QRS Detection Based on an Advanced Multilevel Algorithm. International Journal of Advanced Computer Science and Applications, 2016, 7, .	0.5	6
853	Development of the "Healthcor"™ System as a Cardiac Disorders Symptoms Detector using an Expert System based on Arduino Uno. International Journal of Technology, 2016, 7, 78.	0.4	6
854	Smart medical textiles for monitoring patients with heart conditions. , 2007, , 275-301.		16
855	An Improved QRS Detection Approach based on Two-Lead Bi-Referring. , 2012, , .		1
856	Performance Comparison Of Ann Classifiers For Sleep Apnea Detection Based On Ecg Signal Analysis Using Hilbert Transform. International Journal of Computers & Technology, 2018, 17, 7312-7325.	0.2	7
857	A Real-Time QRS Complex Detection Method. Sheng Wu Wu Li Hsueh Bao, 2011, 27, 222-230.	0.1	7
858	Maternal ECG Cancellation in Abdominal Signal Using ANFIS and Wavelets. Journal of Applied Sciences, 2010, 10, 868-877.	0.1	18
859	Background 1. , 2009, , 11-71.		2
860	Wearable ECG Monitoring and Alerting System Associated with Smartphone. International Journal of E-Health and Medical Communications, 2013, 4, 1-15.	1.4	3
861	An Unbiased Linear Adaptive Filter with Normalized Coefficients for the Removal of Noise in Electrocardiographic Signals. International Journal of Cognitive Informatics and Natural Intelligence, 2009, 3, 73-90.	0.4	5
862	Realtime Detection of ECG Signal R-peaks Using a Lightweight RREADER Algorithm. International Journal of Intelligent Information Processing, 2012, 3, 18-29.	0.1	2
863	QRS Complex Detection Using Combination of Mexican-hat Wavelet and Complex Morlet Wavelet. Journal of Computers, 2013, 8, .	0.4	9
864	Integrated System Based on Wireless Sensors Network for Cardiac Arrhythmia Monitoring. Advances in Electrical and Computer Engineering, 2013, 13, 95-100.	0.5	11

#	ARTICLE	IF	CITATIONS
865	Linear and Nonlinear Parametric Models in Heart Rate Variability Analysis. , 2017, , 87-116.		1
866	An Efficient and Automatic Systolic Peak Detection Algorithm for Photoplethysmographic Signals. International Journal of Computer Applications, 2014, 97, 18-23.	0.2	19
867	REAL TIME ELECTROCARDIOGRAM SEGMENTATION FOR FINGER BASED ECG BIOMETRICS. , 2012, , .		12
868	Analysis of the Electromechanical Activity of the Heart from Synchronized ECG and PCG Signals of Subjects Under Stress. , 2015, , .		4
869	Fabrication and Evaluation of Sensor for Measuring Pulse Wave Velocity using Piezo Film and Conductive Textile. Journal of Sensor Science and Technology, 2012, 21, 135-143.	0.1	4
870	Development of a real-time, semi-capacitive impedance phlebography device. Journal of Electrical Bioimpedance, 2015, 6, 2-9.	0.5	8
871	Non Invasive Foetal Monitoring with a Combined ECG - PCG System. , 0, , .		4
872	Response to Ultra-high Molecular Weight Polyethylene Particles. American Journal of Biomedical Engineering, 2012, 1, 7-12.	0.9	4
873	R-DECO: an open-source Matlab based graphical user interface for the detection and correction of R-peaks. PeerJ Computer Science, 2019, 5, e226.	2.7	29
874	Analysis of Human Electrocardiogram for Biometric Recognition Using Analytic and AR Modeling Extracted Parameters. International Journal of Information and Electronics Engineering, 2014, 4, .	0.2	8
875	R-Peak Detection Algorithm in ECG Signal Based on Multi-Scaled Primitive Signal. Journal of Korea Multimedia Society, 2016, 19, 818-825.	0.1	3
876	Implementation of ECG QRS complex detector for Body Sensor Networks. IOSR Journal of Electronics and Communication Engineering, 2014, 9, 54-59.	0.1	2
877	AN EFFICIENT ALGORITHM FOR R PEAKS DETECTION OF ELECTROCARDIOGRAM SIGNALS. Journal of Mechanics in Medicine and Biology, 2021, 21, .	0.3	0
878	Comparative Study on R-peak Detection over Noisy and Denoised ECG Signal using Wavelet Transform. , 2021, , .		0
879	An Accurate and Efficient Zero-Crossing Line Classifier for Multiscale Parameter Estimation of Gaussian Signals Subject to Noise. , 2021, , .		0
880	Arrhythmia Detection using Pan-Tompkins Algorithm and Hilbert Transform with Real-Time ECG Signals. Academic Perspective Procedia, 2021, 4, 307-315.	0.0	1
881	A Review on Computational Methods for Denoising and Detecting ECG Signals to Detect Cardiovascular Diseases. Archives of Computational Methods in Engineering, 2022, 29, 1875-1914.	6.0	19
882	Computation-efficient and compact FPGA design for a real-time wearable arrhythmia-detector. Biomedical Engineering Advances, 2021, 2, 100019.	2.2	3

#	ARTICLE	IF	CITATIONS
883	A SUPERVISED LEARNING APPROACH BASED ON THE CONTINUOUS WAVELET TRANSFORM FOR R SPIKE DETECTION IN ECG. , 2008, , .		0
884	ECG Segmentation in a Body Sensor Network Using Adaptive Hidden Markov Models. , 2008, , .		0
886	Análise comparativa de desempenho das transformadas Wavelet e Hilbert na detecção do QRS em ECG. Revista Brasileira De Engenharia Biomedica, 2009, 25, 153-166.	0.3	2
887	Biosignalverarbeitung. Biomedizinische Technik, 2010, 55, 1-180.	0.9	11
888	The Use of Field Programmable Analog Array for Heart Beat Detection. Mechatronic Systems and Control, 2010, 7, .	0.2	1
889	An Integrated Statistical Process Control and Wavelet Transformation Model for Detecting QRS Complexes in ECG Signals. International Journal of Artificial Life Research, 2010, 1, 1-20.	0.1	0
890	Minimizing Algorithm of Baseline Wander for ECG Signal using Morphology-pair. Journal of Korean Institute of Intelligent Systems, 2010, 20, 574-579.	0.0	7
891	MEJORAMIENTO DE ALGORITMO CLÁSICO DE DETECCIÓN DE COMPLEJOS QRS EN SEÑAL ELECTROCARDIOGRÁFICA. Ingeniare, 2010, 18, .	0.1	0
893	A COMPLETE ELECTROCARDIOGRAM (ECG) METHODOLOGY FOR ASSESSMENT OF CHRONIC STRESS IN UNEMPLOYMENT. , 2011, , 211-228.		0
894	Noise Cancellation in ECG Signals with an Unbiased Adaptive Filter. , 2011, , 348-366.		2
895	Time Domain Features of Heart Sounds for Determining Mechanical Valve Thrombosis. Lecture Notes in Electrical Engineering, 2011, , 173-181.	0.3	1
896	WEIGHTED TIME WARPING FOR TEMPORAL SEGMENTATION OF MULTI-PARAMETER PHYSIOLOGICAL SIGNALS. , 2011, , .		2
897	Heart Rate Variability Analysis a Noninvasive Clinical Screening Tool to Detect Functional Ability of Diabetic Cardiac Autonomic Neuropathy. International Journal of Computer Applications, 2011, 25, 47-51.	0.2	1
898	Computer Analysis of the Electrocardiogram. , 2012, , 303-347.		1
899	LONG TERM BIOSIGNALS VISUALIZATION AND PROCESSING. , 2012, , .		2
900	Real-Time Robust Heart Rate Estimation Based on Bayesian Framework and Grid Filters. Advances in Medical Technologies and Clinical Practice Book Series, 2012, , 67-90.	0.3	0
902	Detection of Sharp Wave Activity in Biological Signals using Differentiation between Consecutive Samples. , 2013, , .		2
903	Method to Correct Artifacts in Multilead ECG Using Signal Entropy. Lecture Notes in Computer Science, 2013, , 512-518.	1.0	0

#	ARTICLE	IF	CITATIONS
904	Towards a Formal Model for ECG Data Analysis and Decision Making. , 2013, , .		0
905	An Electrocardiogram (ECG) Signal Processing Algorithm for Heart Parameters Estimation based on QRS Complex Detection. , 2013, , .		0
906	Recovering Vital Physiological Signals from Ambulatory Devices. , 2013, , .		0
907	Designing scheme for Portable ECG System with Real-Time Application. IOSR Journal of Electronics and Communication Engineering, 2013, 4, 25-31.	0.1	3
908	A Cloud Computing System for Snore Signals Processing. Lecture Notes in Computer Science, 2013, , 359-366.	1.0	0
909	Heart Sound Segmentation in Noisy Environments. Lecture Notes in Computer Science, 2013, , 254-263.	1.0	0
910	Electrocardiogram Signal Compression with Reconstruction via Radial Basis Function Interpolation Based on the Vertex. International Journal of Fuzzy Logic and Intelligent Systems, 2013, 13, 31-38.	0.6	1
911	Analysis of Noise Sensitivity of Different ECG Detection Algorithms. International Journal of Electrical and Computer Engineering, 2013, 3, .	0.5	4
912	Advanced Signal Processing and Modeling for ANS Data. Series in Bioengineering, 2014, , 45-82.	0.3	0
913	Application of ECG Arrhythmia Classification by Means of Bayesian Theorem. Journal of Applied Sciences, 2014, 14, 165-170.	0.1	2
914	A Study on ECG Signal Classification Techniques. International Journal of Computer Applications, 2014, 86, 9-14.	0.2	4
915	Performance Evaluation of Various Window Techniques for Noise Cancellation from ECG Signal. International Journal of Computer Applications, 2014, 93, 1-5.	0.2	1
916	Fixed-point Optimization of a QRS complex Detection Algorithm Using Wavelet Transform. The Journal of Korea Institute of Information Electronics and Communication Technology, 2014, 7, 126-131.	0.0	0
917	Identification of PVCs based on Peak Detection with Teager Energy Operator. International Journal of Computer Applications, 2014, 103, 38-43.	0.2	4
918	Localization of Characteristic Peaks in Cardiac Signal. International Journal of Biomedical and Clinical Engineering, 2015, 4, 18-31.	0.2	0
919	ECG Signal Classification for Remote Area Patients Using Artificial Neural Networks in Smartphone. International Journal of Computer and Electrical Engineering, 2015, 7, 215-222.	0.2	5
921	A Review on ECG Signal De-noising, QRS Complex, P and T Wave Detection Techniques. International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering, 2015, , 10-14.	0.2	1
922	QRS DETECTION OF ECG - A STATISTICAL ANALYSIS. ICTACT Journal on Communication Technology, 2015, 06, 1080-1083.	0.2	0

#	ARTICLE	IF	CITATIONS
923	Study and Analysis of Electrocardiography Signals for Computation of R Peak Value for Sleep Apnea Patient. <i>Advances in Intelligent Systems and Computing</i> , 2016, , 35-44.	0.5	1
924	A Novel Frequency-Time Based Approach for the Detection of Characteristic Waves in Electrocardiogram Signal. <i>Lecture Notes in Electrical Engineering</i> , 2016, , 57-67.	0.3	4
925	Design of ECG Signal Acquisition and Processing Circuit. , 2016, , .		1
926	Evolutionary optimisation of atrial fibrillation diagnostic algorithms. <i>International Journal of Swarm Intelligence</i> , 2016, 2, 117.	0.2	1
927	Instantaneous Heart Rate Detection using Smart Phones Built-in Camera. , 2016, , .		0
928	A Comparison of Different Clustering Methods for MIT BIH ECG Data. <i>Advances in Image and Video Processing</i> , 2016, 4, .	0.1	0
929	A Novel Preprocessing Tool to Enhance ECG R:wave Extraction. , 0, , .		6
930	Electrocardiographic signals Wavelet Transform - identification and classification properties. <i>Przegląd Elektrotechniczny</i> , 2016, 1, 53-56.	0.1	0
931	Real Deign of Embedded Multicore SoC for Health Monitoring. , 2017, , 245-267.		0
932	Heart Rate Measurement Based on Event Timing Coding Observed by Video Camera. <i>IEICE Transactions on Communications</i> , 2017, E100.B, 926-931.	0.4	2
933	Detection of Cellular Spikes and Classification of Cells from Raw Nanoscale Biosensor Data. <i>Proceedings in Adaptation, Learning and Optimization</i> , 2018, , 75-87.	1.5	0
935	BP and HR Interactions: Assessment of Spontaneous Baroreceptor Reflex Sensitivity. , 2017, , 199-226.		0
936	Linear and Nonlinear Parametric Models in Heart Rate Variability Analysis. , 2017, , 87-116.		0
938	Wearable ECG Monitoring and Alerting System Associated With Smartphone. , 2018, , 900-916.		0
940	Identification of Premature Ventricular Contraction in ECG Signals – A Review. <i>International Journal for Research in Applied Science and Engineering Technology</i> , 2018, 6, 204-213.	0.1	1
941	Forecasting Ventricular Deviation in Monitoring of Live ECG Signal. <i>International Journal of Machine Learning and Networked Collaborative Engineering</i> , 2018, 2, 95-109.	0.1	0
942	Electrocardiogram Fiducial Points Detection and Estimation Methodology for Automatic Diagnose. <i>Open Bioinformatics Journal</i> , 2018, 11, 208-230.	1.0	1
943	ICA-Derived Respiration Using an Adaptive R-Peak Detector. <i>Contributions To Statistics</i> , 2019, , 363-377.	0.2	0

#	ARTICLE	IF	CITATIONS
944	The QRS complex detection using morphological filtering. Archive of Biomedical Science and Engineering, 0, , 001-006.	0.3	2
946	An Adaptive RR Interval Detection Algorithm Based on Species Recognition. International Journal of Computer and Electrical Engineering, 2019, 11, 180-191.	0.2	0
947	ANALIZA PORÓWNAWCZA WYBRANYCH METOD PRZETWARZANIA SYGNAŁU EKG I DETEKCJI ZAŚRODOWISKU GRAFICZNYM. Elektronika, 2019, 1, 30-34.	0.0	0
948	A Framework for Non-contact ECG Signal Detection Device on Smart Chair and Its Implementation. Lecture Notes in Electrical Engineering, 2019, , 639-646.	0.3	0
950	Accurate Calculation of Heart Period and Pulse Wave Transit Time. IFMBE Proceedings, 2020, , 267-275.	0.2	1
951	ATRIAL FIBRILLATION DETECTION ON ELECTROCARDIOGRAMS WITH CONVOLUTIONAL NEURAL NETWORKS. Informatyka Automatyka Pomiarów w Gospodarce i Ochronie Środowiska, 2019, 9, 69-73.	0.2	0
952	On the classification of arrhythmia using supplementary features from Tetrolet transforms. International Journal of Electrical and Computer Engineering, 2019, 9, 5006.	0.5	1
953	Real time ECG R-peak detection by extremum sampling. , 2020, , .		3
955	Detection of Myocardial Infarction from ECG Signal Through Combining CNN and Bi-LSTM. , 2020, , .		1
956	Single Channel QRS Detection Using Wavelet And Median Denoising With Adaptive Multilevel Thresholding. , 2020, , .		2
957	HRV-Spark: Computing Heart Rate Variability Measures Using Apache Spark. , 2020, 2020, .		1
958	Knowledge-Based QRS Detection performed by a Cascade of Moving Average Filters. , 0, , .		0
959	Noise Reduction Method based on Autocorrelation for Threshold-Based Heartbeat Detection. , 2020, , .		0
960	Investigating Useful Morphological characteristics of ECG for Predicting the Onset of Ventricular Arrhythmia. , 2020, , .		0
961	Methods for Estimating the Discrete Rhythmic Structure of Cyclic Random Processes Using Adaptive Interpolation. Advances in Intelligent Systems and Computing, 2021, , 614-627.	0.5	0
962	Inter-beat Interval Estimation from Extremely Noisy Single Lead Electrocardiograms. IFAC-PapersOnLine, 2020, 53, 16482-16487.	0.5	0
963	QRS Complex Detection Algorithm for Wearable Devices. Lecture Notes in Electrical Engineering, 2020, , 167-175.	0.3	1
964	Machine Learned Pulse Transit Time (MLPTT) Measurements from Photoplethysmography. Lecture Notes in Computer Science, 2020, , 49-62.	1.0	2

#	ARTICLE	IF	CITATIONS
965	Effective ECG Beat Classification and Decision Support System Using Dual-Tree Complex Wavelet Transform. Lecture Notes in Networks and Systems, 2020, , 366-374.	0.5	2
966	Electrocardiography Device with PIC18F4550 Microcontroller Using Different Communication Protocols. Bilgisayar Bilimleri, 0, , .	0.0	0
967	A Wireless Single Lead ECG Module for Cloud-Computing Based Postoperative Monitoring of Cardiac Surgical Patients. , 2021, , .		0
968	Properties of Morphological Operators Applied to Analysis of ECG Signals. , 0, , 279-288.		4
969	Hybrid Processing and Time-Frequency Analysis of ECG Signal. Lecture Notes in Computer Science, 2007, , 46-57.	1.0	0
971	REAL-TIME METHOD FOR ECG R-PEAK DETECTION COMBINING AUTOMATIC THRESHOLD AND DIFFERENTIATION. Journal of Mechanics in Medicine and Biology, 2020, 20, 1950023.	0.3	2
973	Real-time ECG algorithms for ambulatory patient monitoring. AMIA ... Annual Symposium proceedings, 2005, , 604-8.	0.2	2
974	A low-cost, universal, and cumulative gating circuit for small and large animal clinical imaging. Proceedings of SPIE, 2008, 6848, 64811.	0.8	1
975	Investigation of ECG Changes in Absence Epilepsy on WAG/Rij Rats. Basic and Clinical Neuroscience, 2015, 6, 123-31.	0.3	2
976	MCG-Net: End-to-End Fine-Grained Delineation and Diagnostic Classification of Cardiac Events From Magnetocardiographs. IEEE Journal of Biomedical and Health Informatics, 2022, 26, 1057-1067.	3.9	2
977	Modeling and Methods of Statistical Processing of a Vector Rhythmic Signal. Open Bioinformatics Journal, 2021, 14, 73-86.	1.0	1
978	Improving the Efficacy of Deep-Learning Models for Heart Beat Detection on Heterogeneous Datasets. Bioengineering, 2021, 8, 193.	1.6	4
979	Trends and applications of ECG analysis and classification. , 2022, , 327-349.		0
980	A Survey on Electrocardiogram Signal Detection and Classification on Hardware Platform. , 2022, , .		0
982	The Unsupervised Pattern Recognition for the Ecg Signal Features Detection. SSRN Electronic Journal, 0, , .	0.4	0
983	R-Peak Detection from ECG Signals Using Fractal Based Mathematical Morphological Operators. , 2021, , .		1
984	A 17.7-pJ/Cycle ECG Processor for Arrhythmia Detection with High Immunity to Power Line Interference and Baseline Drift. , 2020, , .		9
985	Developments in Cardiac Interventions. , 2006, , 167-182.		0

#	ARTICLE	IF	CITATIONS
988	Reliable P wave detection in pathological ECG signals. Scientific Reports, 2022, 12, 6589.	1.6	7
990	Mathematical Morphology and the Heart Signals. , 0, , .		1
991	Supraventricular ectopic beats and ventricular ectopic beats detection based on improved U-net. Physiological Measurement, 2022, , .	1.2	2
992	The Unsupervised Pattern Recognition for the ECG Signal Features Detection. SSRN Electronic Journal, 0, , .	0.4	0
993	ECG Diagnosis for Cardiovascular Diseases Using Soft Computing Algorithms. Current Signal Transduction Therapy, 2022, 17, .	0.3	0
994	On the framework of cardiac arrhythmia characterization using morphological and statistical features. , 2022, , .		0
995	Automated Detection of Cardinal Points of ECG Signal for Feature Extraction Using a Single Median Filter. Journal of the Institution of Engineers (India): Series B, 0, , .	1.3	6
997	The unsupervised pattern recognition for the ECG signal features detection. Biomedical Signal Processing and Control, 2022, 78, 103947.	3.5	0
999	QRS Detection in Electrocardiogram Signal of Exercise Physical Activity. Journal of Physics: Conference Series, 2022, 2319, 012021.	0.3	1
1000	Implementation of Optimized Low Pass Filter for ECG filtering using Verilog. Journal of Physics: Conference Series, 2022, 2312, 012049.	0.3	5
1001	Adaptive R-Peak Detection on Wearable ECG Sensors for High-Intensity Exercise. IEEE Transactions on Biomedical Engineering, 2023, 70, 941-953.	2.5	3
1002	ECG Characteristic Detection Using DenseNet based on Attention Mechanism and Feature Pyramid. , 2022, , .		1
1003	Design of Wireless Motion Sensor Nodes Based on Kalman Filter Algorithm. Recent Advances in Electrical and Electronic Engineering, 2022, 15, .	0.2	0
1004	ECG and Heart Rate Variability in Sleep-Related Breathing Disorders. Advances in Experimental Medicine and Biology, 2022, , 159-183.	0.8	1
1005	FPGA Implementation of Combined ECG Signal Denoising, Peak Detection Technique for Cardiac Pacemaker Systems. Energy Systems in Electrical Engineering, 2023, , 111-129.	0.5	0
1006	ECG Signal Detection and Lossless Data Compression Techniques for Implantable Cardiac Pacemaker Systems. Energy Systems in Electrical Engineering, 2023, , 79-110.	0.5	0
1007	Existing Methods to Evaluate Pacemaker Device Performance. Energy Systems in Electrical Engineering, 2023, , 15-48.	0.5	0
1008	Vital Signs Sensing Gown Employing ECG-Based Intelligent Algorithms. Biosensors, 2022, 12, 964.	2.3	1

#	ARTICLE	IF	CITATIONS
1009	Precise T-wave endpoint detection using polynomial fitting and natural geometric approach algorithm. Biomedical Signal Processing and Control, 2023, 80, 104254.	3.5	2
1010	A real-time embedded system to detect QRS-complex and arrhythmia classification using LSTM through hybridized features. Expert Systems With Applications, 2023, 214, 119221.	4.4	6
1011	Enhancing Electrocardiogram Classification with Multiple Datasets and Distant Transfer Learning. Bioengineering, 2022, 9, 683.	1.6	1
1012	VLSI Implementation of QRS Complex Detector Based on Wavelet Decomposition. IEEE Access, 2022, 10, 134758-134768.	2.6	1
1013	From Continuous ECG Signals to Extracted Features for Machine Learning Models and Arrhythmia Annotations. , 2022, , .		1
1014	Internet of Things-Based ECG and Vitals Healthcare Monitoring System. Micromachines, 2022, 13, 2153.	1.4	4
1015	Domain Agnostic Post-Processing for QRS Detection Using Recurrent Neural Network. IEEE Journal of Biomedical and Health Informatics, 2023, 27, 3748-3759.	3.9	1
1016	Morphological ECG subtraction method for removing ECG artifacts from diaphragm EMG. Technology and Health Care, 2023, , 1-13.	0.5	0
1017	A Deep Learning Architecture Using 3D Vectorcardiogram to Detect R-Peaks in ECG with Enhanced Precision. Sensors, 2023, 23, 2288.	2.1	3
1018	Electrocardiogram-based Parameters for the Prediction of Sudden Cardiac Death: A Review. Jurnal Kejuruteraan, 2020, 32, 259-269.	0.2	0
1019	Practical R-R Interval Editing for Heart Rate Variability Analysis Using Single-Channel Wearable ECG Devices. IEEE Access, 2023, 11, 25543-25582.	2.6	1
1020	Automatic SWT Based QRS Detection Using Weighted Subbands and Shannon Energy Peak Amplification for ECG Signal Analysis Devices. , 2022, , .		3
1021	A Comprehensive Review of Computer-based Techniques for R-Peaks/QRS Complex Detection in ECG Signal. Archives of Computational Methods in Engineering, 2023, 30, 3703-3721.	6.0	2
1025	Smart Data Logger with Continuous ECG Signal Monitoring. Lecture Notes in Networks and Systems, 2023, , 173-181.	0.5	0
1026	ECG noise elimination using an FPGA version of a modified error normalized LMS adaptive filter. AIP Conference Proceedings, 2023, , .	0.3	0
1029	An Efficient 1D Autoencoder-Based Approach for R-Peaks Detection in Electrocardiogram Signals. , 2023, , .		0
1031	A Comprehensive Comparison of Six Publicly Available Algorithms for Localization of QRS Complex on Electrocardiograph. , 2023, , .		0
1033	Microvolt T-Wave and Ventricular Repolarization Duration Alternans. IFMBE Proceedings, 2024, , 72-78.	0.2	0

#	ARTICLE	IF	CITATIONS
1036	Comparative Analysis of QRS Detection Algorithms: A Study on Accuracy and Processing Speed in Raspberry Pi Single-Board Computer. , 2023, , .		0
1040	Implementing a Calibration System for Demand Pacemaker Using a Web-Based Approach. Communications in Computer and Information Science, 2024, , 376-387.	0.4	0