

Stephen J Redmond

List of Publications by Year in descending order

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134
papers

4,430
citations

136950

32
h-index

123424

61
g-index

137
all docs

137
docs citations

137
times ranked

5268
citing authors

#	ARTICLE	IF	CITATIONS
1	A review of tactile sensing technologies with applications in biomedical engineering. <i>Sensors and Actuators A: Physical</i> , 2012, 179, 17-31.	4.1	576
2	Barometric Pressure and Triaxial Accelerometry-Based Falls Event Detection. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2010, 18, 619-627.	4.9	257
3	Sensors-Based Wearable Systems for Monitoring of Human Movement and Falls. <i>IEEE Sensors Journal</i> , 2012, 12, 658-670.	4.7	236
4	A method for initialising the K-means clustering algorithm using kd-trees. <i>Pattern Recognition Letters</i> , 2007, 28, 965-973.	4.2	226
5	Cardiorespiratory-Based Sleep Staging in Subjects With Obstructive Sleep Apnea. <i>IEEE Transactions on Biomedical Engineering</i> , 2006, 53, 485-496.	4.2	179
6	Tracking the Evolution of Smartphone Sensing for Monitoring Human Movement. <i>Sensors</i> , 2015, 15, 18901-18933.	3.8	157
7	Tactile Sensors for Friction Estimation and Incipient Slip Detection—Toward Dexterous Robotic Manipulation: A Review. <i>IEEE Sensors Journal</i> , 2018, 18, 9049-9064.	4.7	130
8	Wearable pendant device monitoring using new wavelet-based methods shows daily life and laboratory gaits are different. <i>Medical and Biological Engineering and Computing</i> , 2016, 54, 663-674.	2.8	126
9	Signal quality measures for pulse oximetry through waveform morphology analysis. <i>Physiological Measurement</i> , 2011, 32, 369-384.	2.1	123
10	QRS Detection Algorithm for Telehealth Electrocardiogram Recordings. <i>IEEE Transactions on Biomedical Engineering</i> , 2016, 63, 1377-1388.	4.2	87
11	Longitudinal Falls-Risk Estimation Using Triaxial Accelerometry. <i>IEEE Transactions on Biomedical Engineering</i> , 2010, 57, 534-541.	4.2	81
12	Predicting the risk of exacerbation in patients with chronic obstructive pulmonary disease using home telehealth measurement data. <i>Artificial Intelligence in Medicine</i> , 2015, 63, 51-59.	6.5	80
13	Electrocardiogram signal quality measures for unsupervised telehealth environments. <i>Physiological Measurement</i> , 2012, 33, 1517-1533.	2.1	74
14	Quaternion-Based Complementary Filter for Attitude Determination of a Smartphone. <i>IEEE Sensors Journal</i> , 2016, 16, 6008-6017.	4.7	68
15	Towards Using Photo-Plethysmogram Amplitude to Measure Blood Pressure During Sleep. <i>Annals of Biomedical Engineering</i> , 2010, 38, 945-954.	2.5	65
16	A comparison of activity classification in younger and older cohorts using a smartphone. <i>Physiological Measurement</i> , 2014, 35, 2269-2286.	2.1	64
17	Characterization of a capacitive tactile shear sensor for application in robotic and upper limb prostheses. <i>Sensors and Actuators A: Physical</i> , 2011, 165, 164-172.	4.1	61
18	Assessing fall risk using wearable sensors: a practical discussion. <i>Zeitschrift Fur Gerontologie Und Geriatrie</i> , 2012, 45, 694-706.	1.8	56

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19	Fall Risk Assessment Through Automatic Combination of Clinical Fall Risk Factors and Body-Worn Sensor Data. IEEE Journal of Biomedical and Health Informatics, 2017, 21, 725-731.	6.3	54
20	Wavelet-Based Sit-To-Stand Detection and Assessment of Fall Risk in Older People Using a Wearable Pendant Device. IEEE Transactions on Biomedical Engineering, 2017, 64, 1602-1607.	4.2	54
21	Indoor location-aware medical systems for smart homecare and telehealth monitoring: state-of-the-art. Physiological Measurement, 2015, 36, R53-R87.	2.1	53
22	Low-Power Fall Detector Using Triaxial Accelerometry and Barometric Pressure Sensing. IEEE Transactions on Industrial Informatics, 2016, 12, 2302-2311.	11.3	50
23	Differences Between Gait on Stairs and Flat Surfaces in Relation to Fall Risk and Future Falls. IEEE Journal of Biomedical and Health Informatics, 2017, 21, 1479-1486.	6.3	49
24	Design of a Decision-Support Architecture for Management of Remotely Monitored Patients. IEEE Transactions on Information Technology in Biomedicine, 2010, 14, 1216-1226.	3.2	48
25	Low-power technologies for wearable telecare and telehealth systems: A review. Biomedical Engineering Letters, 2015, 5, 1-9.	4.1	44
26	Review: Are we stumbling in our quest to find the best predictor? Over-optimism in sensor-based models for predicting falls in older adults. Healthcare Technology Letters, 2015, 2, 79-88.	3.3	44
27	Computationally Efficient Adaptive Error-State Kalman Filter for Attitude Estimation. IEEE Sensors Journal, 2018, 18, 9332-9342.	4.7	44
28	Encoding of tangential torque in responses of tactile afferent fibres innervating the fingerpad of the monkey. Journal of Physiology, 2010, 588, 1057-1072.	2.9	43
29	Unintended Consequences of Wearable Sensor Use in Healthcare. Yearbook of Medical Informatics, 2016, 25, 73-86.	1.0	41
30	Spectral Analysis of Accelerometry Signals From a Directed-Routine for Falls-Risk Estimation. IEEE Transactions on Biomedical Engineering, 2011, 58, 2308-2315.	4.2	38
31	Estimating Lower Limb Kinematics Using a Reduced Wearable Sensor Count. IEEE Transactions on Biomedical Engineering, 2021, 68, 1293-1304.	4.2	37
32	ECG quality measures in telecare monitoring. , 2008, 2008, 2869-72.		36
33	A small-scale randomised controlled trial of home telemonitoring in patients with severe chronic obstructive pulmonary disease. Journal of Telemedicine and Telecare, 2017, 23, 650-656.	2.7	35
34	Predicting Days in Hospital Using Health Insurance Claims. IEEE Journal of Biomedical and Health Informatics, 2015, 19, 1224-1233.	6.3	33
35	A novel optical 3D force and displacement sensor “Towards instrumenting the PapillArray tactile sensor. Sensors and Actuators A: Physical, 2019, 291, 174-187.	4.1	33
36	Simulated Unobtrusive Falls Detection With Multiple Persons. IEEE Transactions on Biomedical Engineering, 2012, 59, 3185-3196.	4.2	31

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37	Can Triaxial Accelerometry Accurately Recognize Inclined Walking Terrains?. IEEE Transactions on Biomedical Engineering, 2010, 57, 2506-2516.	4.2	30
38	Digital assessment of falls risk, frailty, and mobility impairment using wearable sensors. Npj Digital Medicine, 2019, 2, 125.	10.9	30
39	A wearable triaxial accelerometry system for longitudinal assessment of falls risk. , 2008, 2008, 2840-3.		29
40	Evaluation of an mHealth-Based Adjunct to Outpatient Cardiac Rehabilitation. IEEE Journal of Biomedical and Health Informatics, 2018, 22, 1938-1948.	6.3	27
41	A Smartphone-Based Model of Care to Support Patients With Cardiac Disease Transitioning From Hospital to the Community (TeleClinical Care): Pilot Randomized Controlled Trial. JMIR MHealth and UHealth, 2022, 10, e32554.	3.7	27
42	PapillArray: An incipient slip sensor for dexterous robotic or prosthetic manipulation “ design and prototype validation. Sensors and Actuators A: Physical, 2018, 270, 195-204.	4.1	26
43	A Low-Power Fall Detector Balancing Sensitivity and False Alarm Rate. IEEE Journal of Biomedical and Health Informatics, 2018, 22, 1929-1937.	6.3	26
44	Falls event detection using triaxial accelerometry and barometric pressure measurement. , 2009, 2009, 6111-4.		24
45	A Comparison of Magnetic Resonance Imaging and Neuropsychological Examination in the Diagnostic Distinction of Alzheimer’s Disease and Behavioral Variant Frontotemporal Dementia. Frontiers in Aging Neuroscience, 2016, 8, 119.	3.4	24
46	Multivariate classification of systemic vascular resistance using photoplethysmography. Physiological Measurement, 2011, 32, 1117-1132.	2.1	22
47	Development of a standard fall data format for signals from body-worn sensors. Zeitschrift Fur Gerontologie Und Geriatrie, 2013, 46, 720-726.	1.8	22
48	New Methods to Monitor Stair Ascents Using a Wearable Pendant Device Reveal How Behavior, Fear, and Frailty Influence Falls in Octogenarians. IEEE Transactions on Biomedical Engineering, 2015, 62, 2595-2601.	4.2	22
49	Software simulation of unobtrusive falls detection at night-time using passive infrared and pressure mat sensors. , 2010, 2010, 2115-8.		21
50	Estimation of cardiac output and systemic vascular resistance using a multivariate regression model with features selected from the finger photoplethysmogram and routine cardiovascular measurements. BioMedical Engineering OnLine, 2013, 12, 19.	2.7	21
51	Selecting Power-Efficient Signal Features for a Low-Power Fall Detector. IEEE Transactions on Biomedical Engineering, 2017, 64, 2729-2736.	4.2	21
52	Adaptive template matching of photoplethysmogram pulses to detect motion artefact. Physiological Measurement, 2018, 39, 105005.	2.1	21
53	Deep Learning for Activity Recognition in Older People Using a Pocket-Worn Smartphone. Sensors, 2020, 20, 7195.	3.8	21
54	Improved Measurement of Blood Pressure by Extraction of Characteristic Features from the Cuff Oscillometric Waveform. Sensors, 2015, 15, 14142-14161.	3.8	20

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55	Design of an unobtrusive wireless sensor network for nighttime falls detection. , 2011, 2011, 5275-8.		19
56	Tactile afferents encode grip safety before slip for different frictions. , 2014, 2014, 4123-6.		19
57	Analyzing health insurance claims on different timescales to predict days in hospital. Journal of Biomedical Informatics, 2016, 60, 187-196.	4.3	19
58	Gait as a biomarker? Accelerometers reveal that reduced movement quality while walking is associated with Parkinson's disease, ageing and fall risk. , 2014, 2014, 5968-71.		18
59	Signal Quality Measures on Pulse Oximetry and Blood Pressure Signals Acquired from Self-Measurement in a Home Environment. IEEE Journal of Biomedical and Health Informatics, 2015, 19, 102-108.	6.3	18
60	Energy expenditure estimation during normal ambulation using triaxial accelerometry and barometric pressure. Physiological Measurement, 2012, 33, 1811-1830.	2.1	17
61	Automatic segmentation of triaxial accelerometry signals for falls risk estimation. , 2010, 2010, 2234-7.		16
62	Decoding tactile afferent activity to obtain an estimate of instantaneous force and torque applied to the fingerpad. Journal of Neurophysiology, 2015, 114, 474-484.	1.8	16
63	Friction sensing mechanisms for perception and motor control: passive touch without sliding may not provide perceivable frictional information. Journal of Neurophysiology, 2021, 125, 809-823.	1.8	15
64	A Multimodal Data Fusion Technique for Heartbeat Detection in Wearable IoT Sensors. IEEE Internet of Things Journal, 2022, 9, 2071-2082.	8.7	15
65	Energy expenditure estimation using triaxial accelerometry and barometric pressure measurement. , 2010, 2010, 5185-8.		14
66	Signal quality measures for unsupervised blood pressure measurement. Physiological Measurement, 2012, 33, 465-486.	2.1	14
67	Evaluation of an automated fetal myocardial performance index. Ultrasound in Obstetrics and Gynecology, 2016, 48, 496-503.	1.7	14
68	Classification of Texture and Frictional Condition at Initial Contact by Tactile Afferent Responses. Lecture Notes in Computer Science, 2014, , 460-468.	1.3	14
69	Bottom-up subspace clustering suggests a paradigm shift to prevent fall injuries. Medical Hypotheses, 2015, 84, 356-362.	1.5	13
70	Bio-Inspired PVDF-Based, Mouse Whisker Mimicking, Tactile Sensor. Applied Sciences (Switzerland), 2016, 6, 297.	2.5	13
71	Characterisation and functional mapping of surface potentials in the rat dorsal column nuclei. Journal of Physiology, 2017, 595, 4507-4524.	2.9	13
72	Classification of walking patterns on inclined surfaces from accelerometry data. , 2009, , .		12

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73	A guideline-based decision support system for generating referral recommendations from routinely recorded home telehealth measurement data. , 2010, 2010, 6166-9.		11
74	Simulation of a smart home environment. , 2013, , .		11
75	Design of a Decision Support System for a Home Telehealth Application. International Journal of E-Health and Medical Communications, 2013, 4, 68-79.	1.6	11
76	Real-time Friction Estimation for Grip Force Control. , 2021, , .		11
77	Design, simulation and fabrication of a low cost capacitive tactile shear sensor for a robotic hand. , 2009, 2009, 4132-5.		10
78	Classification between non-multiple fallers and multiple fallers using a triaxial accelerometry-based system. , 2011, 2011, 1499-502.		10
79	Estimating Lower Limb Kinematics Using a Lie Group Constrained Extended Kalman Filter with a Reduced Wearable IMU Count and Distance Measurements. Sensors, 2020, 20, 6829.	3.8	10
80	Telehealth technologies for managing chronic disease - experiences from Australia and the UK. , 2010, 2010, 5267-9.		9
81	Classification of low systemic vascular resistance using photoplethysmogram and routine cardiovascular measurements. , 2010, 2010, 1930-3.		9
82	Biosignal quality detection: An essential feature for unsupervised telehealth applications. , 2010, , .		9
83	Inertial measurements of free-living activities: Assessing mobility to predict falls. , 2014, 2014, 6892-5.		9
84	Validation of an accelerometer-based fall prediction model. , 2014, 2014, 4531-4.		9
85	Design of an unobtrusive system for fall detection in multiple occupancy residences. , 2013, 2013, 4690-3.		8
86	An eight-legged tactile sensor to estimate coefficient of static friction. , 2015, 2015, 4407-10.		8
87	Low-power operation of a barometric pressure sensor for use in an automatic fall detector. , 2016, 2016, 2010-2013.		8
88	Evaluation of functional deficits and falls risk in the elderly – methods for preventing falls. , 2009, 2009, 6179-82.		7
89	Effect of Home Telehealth Data Quality on Decision Support System Performance. Procedia Computer Science, 2015, 64, 352-359.	2.0	7
90	Peripheral Nerve Activation Evokes Machine-Learnable Signals in the Dorsal Column Nuclei. Frontiers in Systems Neuroscience, 2019, 13, 11.	2.5	7

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91	Smart Triggering of the Barometer in a Fall Detector Using a Semi-Permeable Membrane. IEEE Transactions on Biomedical Engineering, 2020, 67, 146-157.	4.2	7
92	A Biomimetic Tactile Fingerprint Induces Incipient Slip. , 2020, , .		7
93	A Euclidean Geometry Based Algebraic Construction Technique for Girth-8 Gallager LDPC Codes. , 2006, , .		6
94	Biosignal Processing to Meet the Emerging Needs of Telehealth Monitoring Environments. Lecture Notes in Electrical Engineering, 2010, , 263-280.	0.4	6
95	Generating tactile afferent stimulation patterns for slip and touch feedback in neural prosthetics. , 2013, 2013, 5922-5.		6
96	Automation of the Fetal Right Myocardial Performance Index to Optimise Repeatability. Fetal Diagnosis and Therapy, 2018, 44, 28-35.	1.4	6
97	Learning the Orientation of a Loosely-Fixed Wearable IMU Relative to the Body Improves the Recognition Rate of Human Postures and Activities. Sensors, 2019, 19, 2845.	3.8	6
98	Trials and Tribulations: mHealth Clinical Trials in the COVID-19 Pandemic. Yearbook of Medical Informatics, 2021, 30, 272-279.	1.0	6
99	Classifying Torque, Normal Force and Direction Using Monkey Afferent Nerve Spike Rates. Lecture Notes in Computer Science, 2010, , 43-50.	1.3	6
100	Improved Kinematics and Motor Control in a Longitudinal Study of a Complex Therapy Movement in Chronic Stroke. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 682-691.	4.9	5
101	A review of the neurobiomechanical processes underlying secure gripping in object manipulation. Neuroscience and Biobehavioral Reviews, 2021, 123, 286-300.	6.1	5
102	Estimating Lower Body Kinematics Using a Lie Group Constrained Extended Kalman Filter and Reduced IMU Count. IEEE Sensors Journal, 2021, 21, 20969-20979.	4.7	5
103	Piecewise-linear trend detection in longitudinal physiological measurements. , 2009, 2009, 3413-6.		4
104	Ultrasound user-identification for wireless sensor networks. , 2010, 2010, 5756-9.		4
105	Applications of supervised learning to biological signals: ECG signal quality and systemic vascular resistance. , 2012, 2012, 57-60.		4
106	Automated fetal cardiac valve movement detection for modified myocardial performance index calculation. , 2014, 2014, 1063-6.		4
107	A low-power fall detection algorithm based on triaxial acceleration and barometric pressure. , 2014, 2014, 570-3.		4
108	Process Evaluation of a Randomised Controlled Trial for TeleClinical Care, a Smartphone-App Based Model of Care. Frontiers in Medicine, 2021, 8, 780882.	2.6	4

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109	Decoding tactile sensation: Multiple regression analysis of monkey fingertip afferent mechanoreceptor population responses. , 2012, 2012, 4631-4.		3
110	Pilot evaluation of an unobtrusive system to detect falls at nighttime. , 2014, 2014, 1756-9.		3
111	Study protocol for the PHANTOM study: prehospital assessment of noninvasive tissue oximetry monitoring. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, 2014, 22, 57.	2.6	3
112	Estimating Lower Limb Kinematics using Distance Measurements with a Reduced Wearable Inertial Sensor Count. , 2020, 2020, 4858-4862.		3
113	Submillimeter Lateral Displacement Enables Friction Sensing and Awareness of Surface Slipperiness. IEEE Transactions on Haptics, 2022, 15, 20-25.	2.7	3
114	MLSP Data Analysis Competition 2006: Denoising of Magnetoencephelographic Data. , 2006, , .		2
115	Denoising of magnetoencephalographic data using spatial averaging. Neurocomputing, 2008, 72, 112-118.	5.9	2
116	Online estimation of respiratory mechanics in non-invasive pressure support ventilation: A bench model study. , 2010, 2010, 2489-92.		2
117	Effect of ECG quality measures on piecewise-linear trend detection for telehealth decision support systems. , 2010, 2010, 2877-80.		2
118	Taste of Electrical Engineering workshops for high school students. , 2012, , .		2
119	Techniques for measuring energy expenditure with portable devices. , 2013, , .		2
120	Prediction of chronic obstructive pulmonary disease exacerbation using physiological time series patterns. , 2013, 2013, 6784-7.		2
121	Monitoring for Elderly Care: The Role of Wearable Sensors in Fall Detection and Fall Prediction Research. , 2015, , 619-652.		2
122	Automated cardiac time interval measurement for Modified Myocardial Performance Index calculation of right ventricle. , 2015, 2015, 7288-91.		2
123	Design of a decision support system using open source software for a home telehealth application. , 2011, , .		1
124	Impact of hierarchies of clinical codes on predicting future days in hospital. , 2015, 2015, 6852-5.		1
125	A Kalman filter to estimate altitude change during a fall. , 2016, 2016, 5889-5892.		1
126	Estimating Lower Limb Kinematics using a Lie Group Constrained EKF and a Reduced Wearable IMU Count. , 2020, , .		1

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127	An Eight-Legged Tactile Sensor to Estimate Coefficient of Static Friction: Improvements in Design and Evaluation. Lecture Notes in Computer Science, 2016, , 493-502.	1.3	1
128	Live Demonstration: Dynamic Grip-force Control using Real-time Friction Estimation from Incipient Slip Events. , 2020, , .		1
129	Modeling the Optical Sensing Principle of the PapillArray Tactile Sensor. , 2021, , .		1
130	Construction of Girth 8 LDPC Codes based on Multidimensional Finite Lattices. Proceedings - International Symposium on Computers and Communications, 2007, , .	0.0	0
131	Estimation of cardiac output and total peripheral resistance in preterm infants by arterial waveform analysis. , 2013, 2013, 2308-11.		0
132	Predicting number of hospitalization days based on health insurance claims data using bagged regression trees. , 2014, 2014, 2706-9.		0
133	Classification of Implantable Rotary Blood Pump States With Class Noise. IEEE Journal of Biomedical and Health Informatics, 2016, 20, 829-837.	6.3	0
134	Tracking Lower Body 3D Kinematics using Three IMUs. , 2021, , .		0