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 Multimodal Data Fusion Technique for Heartbeat Detection in Wearable IoT Sensors. IEEE Internet of Things Journal, 2022, 9, 2071-2082.	8.7	15
2	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
3	Submillimeter Lateral Displacement Enables Friction Sensing and Awareness of Surface Slipperiness. IEEE Transactions on Haptics, 2022, 15, 20-25.	2.7	3
4	Estimating Lower Limb Kinematics Using a Reduced Wearable Sensor Count. IEEE Transactions on Biomedical Engineering, 2021, 68, 1293-1304.	4.2	37
5	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
6	Trials and Tribulations: mHealth Clinical Trials in the COVID-19 Pandemic. Yearbook of Medical Informatics, 2021, 30, 272-279.	1.0	6
7	A review of the neurobiomechanical processes underlying secure gripping in object manipulation. Neuroscience and Biobehavioral Reviews, 2021, 123, 286-300.	6.1	5
8	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
9	Real-time Friction Estimation for Grip Force Control. , 2021, , .		11
10	Modeling the Optical Sensing Principle of the PapillArray Tactile Sensor. , 2021, , .		1
11	Tracking Lower Body 3D Kinematics using Three IMUs. , 2021, , .		0
12	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
13	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
14	Estimating Lower Limb Kinematics using Distance Measurements with a Reduced Wearable Inertial Sensor Count. , 2020, 2020, 4858-4862.		3
15	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
16	Deep Learning for Activity Recognition in Older People Using a Pocket-Worn Smartphone. Sensors, 2020, 20, 7195.	3.8	21
17	Estimating Lower Limb Kinematics using a Lie Group Constrained EKF and a Reduced Wearable IMU Count. , 2020, , .		1
18	A Biomimetic Tactile Fingerprint Induces Incipient Slip. , 2020, , .		7

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19	Live Demonstration: Dynamic Grip-force Control using Real-time Friction Estimation from Incipient Slip Events. , 2020, , .		1
20	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
21	Peripheral Nerve Activation Evokes Machine-Learnable Signals in the Dorsal Column Nuclei. Frontiers in Systems Neuroscience, 2019, 13, 11.	2.5	7
22	A novel optical 3D force and displacement sensor â€“ Towards instrumenting the PapillArray tactile sensor. Sensors and Actuators A: Physical, 2019, 291, 174-187.	4.1	33
23	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
24	Digital assessment of falls risk, frailty, and mobility impairment using wearable sensors. Npj Digital Medicine, 2019, 2, 125.	10.9	30
25	PapillArray: An incipient slip sensor for dexterous robotic or prosthetic manipulation â€“ design and prototype validation. Sensors and Actuators A: Physical, 2018, 270, 195-204.	4.1	26
26	Evaluation of an mHealth-Based Adjunct to Outpatient Cardiac Rehabilitation. IEEE Journal of Biomedical and Health Informatics, 2018, 22, 1938-1948.	6.3	27
27	Automation of the Fetal Right Myocardial Performance Index to Optimise Repeatability. Fetal Diagnosis and Therapy, 2018, 44, 28-35.	1.4	6
28	Tactile Sensors for Friction Estimation and Incipient Slip Detectionâ€”Toward Dexterous Robotic Manipulation: A Review. IEEE Sensors Journal, 2018, 18, 9049-9064.	4.7	130
29	Adaptive template matching of photoplethysmogram pulses to detect motion artefact. Physiological Measurement, 2018, 39, 105005.	2.1	21
30	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
31	Computationally Efficient Adaptive Error-State Kalman Filter for Attitude Estimation. IEEE Sensors Journal, 2018, 18, 9332-9342.	4.7	44
32	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
33	Selecting Power-Efficient Signal Features for a Low-Power Fall Detector. IEEE Transactions on Biomedical Engineering, 2017, 64, 2729-2736.	4.2	21
34	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
35	Characterisation and functional mapping of surface potentials in the rat dorsal column nuclei. Journal of Physiology, 2017, 595, 4507-4524.	2.9	13
36	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

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37	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
38	Bio-Inspired PVDF-Based, Mouse Whisker Mimicking, Tactile Sensor. Applied Sciences (Switzerland), 2016, 6, 297.	2.5	13
39	Unintended Consequences of Wearable Sensor Use in Healthcare. Yearbook of Medical Informatics, 2016, 25, 73-86.	1.0	41
40	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
41	Quaternion-Based Complementary Filter for Attitude Determination of a Smartphone. IEEE Sensors Journal, 2016, 16, 6008-6017.	4.7	68
42	QRS Detection Algorithm for Telehealth Electrocardiogram Recordings. IEEE Transactions on Biomedical Engineering, 2016, 63, 1377-1388.	4.2	87
43	Low-Power Fall Detector Using Triaxial Accelerometry and Barometric Pressure Sensing. IEEE Transactions on Industrial Informatics, 2016, 12, 2302-2311.	11.3	50
44	Low-power operation of a barometric pressure sensor for use in an automatic fall detector. , 2016, 2016, 2010-2013.		8
45	A Kalman filter to estimate altitude change during a fall. , 2016, 2016, 5889-5892.		1
46	Evaluation of an automated fetal myocardial performance index. Ultrasound in Obstetrics and Gynecology, 2016, 48, 496-503.	1.7	14
47	Analyzing health insurance claims on different timescales to predict days in hospital. Journal of Biomedical Informatics, 2016, 60, 187-196.	4.3	19
48	Classification of Implantable Rotary Blood Pump States With Class Noise. IEEE Journal of Biomedical and Health Informatics, 2016, 20, 829-837.	6.3	0
49	Wearable pendant device monitoring using new wavelet-based methods shows daily life and laboratory gaits are different. Medical and Biological Engineering and Computing, 2016, 54, 663-674.	2.8	126
50	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
51	Monitoring for Elderly Care: The Role of Wearable Sensors in Fall Detection and Fall Prediction Research. , 2015, , 619-652.		2
52	Indoor location-aware medical systems for smart homecare and telehealth monitoring: state-of-the-art. Physiological Measurement, 2015, 36, R53-R87.	2.1	53
53	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
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	Tracking the Evolution of Smartphone Sensing for Monitoring Human Movement. Sensors, 2015, 15, 18901-18933.	3.8	157
56	Impact of hierarchies of clinical codes on predicting future days in hospital. , 2015, 2015, 6852-5.		1
57	Automated cardiac time interval measurement for Modified Myocardial Performance Index calculation of right ventricle. , 2015, 2015, 7288-91.		2
58	An eight-legged tactile sensor to estimate coefficient of static friction. , 2015, 2015, 4407-10.		8
59	Effect of Home Telehealth Data Quality on Decision Support System Performance. Procedia Computer Science, 2015, 64, 352-359.	2.0	7
60	Predicting Days in Hospital Using Health Insurance Claims. IEEE Journal of Biomedical and Health Informatics, 2015, 19, 1224-1233.	6.3	33
61	Bottom-up subspace clustering suggests a paradigm shift to prevent fall injuries. Medical Hypotheses, 2015, 84, 356-362.	1.5	13
62	Predicting the risk of exacerbation in patients with chronic obstructive pulmonary disease using home telehealth measurement data. Artificial Intelligence in Medicine, 2015, 63, 51-59.	6.5	80
63	Low-power technologies for wearable telecare and telehealth systems: A review. Biomedical Engineering Letters, 2015, 5, 1-9.	4.1	44
64	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
65	Review: Are we stumbling in our quest to find the best predictor? Overâ€optimism in sensorâ€based models for predicting falls in older adults. Healthcare Technology Letters, 2015, 2, 79-88.	3.3	44
66	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
67	Inertial measurements of free-living activities: Assessing mobility to predict falls. , 2014, 2014, 6892-5.		9
68	Pilot evaluation of an unobtrusive system to detect falls at nighttime. , 2014, 2014, 1756-9.		3
69	Tactile afferents encode grip safety before slip for different frictions. , 2014, 2014, 4123-6.		19
70	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
71	Validation of an accelerometer-based fall prediction model. , 2014, 2014, 4531-4.		9
72	Automated fetal cardiac valve movement detection for modified myocardial performance index calculation. , 2014, 2014, 1063-6.		4

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73	Predicting number of hospitalization days based on health insurance claims data using bagged regression trees. , 2014, 2014, 2706-9.		0
74	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
75	A low-power fall detection algorithm based on triaxial acceleration and barometric pressure. , 2014, 2014, 570-3.		4
76	A comparison of activity classification in younger and older cohorts using a smartphone. Physiological Measurement, 2014, 35, 2269-2286.	2.1	64
77	Classification of Texture and Frictional Condition at Initial Contact by Tactile Afferent Responses. Lecture Notes in Computer Science, 2014, , 460-468.	1.3	14
78	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
79	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
80	Simulation of a smart home environment. , 2013, , .		11
81	Estimation of cardiac output and total peripheral resistance in preterm infants by arterial waveform analysis. , 2013, 2013, 2308-11.		0
82	Techniques for measuring energy expenditure with portable devices. , 2013, , .		2
83	Design of an unobtrusive system for fall detection in multiple occupancy residences. , 2013, 2013, 4690-3.		8
84	Generating tactile afferent stimulation patterns for slip and touch feedback in neural prosthetics. , 2013, 2013, 5922-5.		6
85	Prediction of chronic obstructive pulmonary disease exacerbation using physiological time series patterns. , 2013, 2013, 6784-7.		2
86	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
87	Energy expenditure estimation during normal ambulation using triaxial accelerometry and barometric pressure. Physiological Measurement, 2012, 33, 1811-1830.	2.1	17
88	Decoding tactile sensation: Multiple regression analysis of monkey fingertip afferent mechanoreceptor population responses. , 2012, 2012, 4631-4.		3
89	Taste of Electrical Engineering workshops for high school students. , 2012, , .		2
90	Electrocardiogram signal quality measures for unsupervised telehealth environments. Physiological Measurement, 2012, 33, 1517-1533.	2.1	74

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91	Applications of supervised learning to biological signals: ECG signal quality and systemic vascular resistance. , 2012, 2012, 57-60.		4
92	Assessing fall risk using wearable sensors: a practical discussion. Zeitschrift Fur Gerontologie Und Geriatrie, 2012, 45, 694-706.	1.8	56
93	Simulated Unobtrusive Falls Detection With Multiple Persons. IEEE Transactions on Biomedical Engineering, 2012, 59, 3185-3196.	4.2	31
94	Sensors-Based Wearable Systems for Monitoring of Human Movement and Falls. IEEE Sensors Journal, 2012, 12, 658-670.	4.7	236
95	Signal quality measures for unsupervised blood pressure measurement. Physiological Measurement, 2012, 33, 465-486.	2.1	14
96	A review of tactile sensing technologies with applications in biomedical engineering. Sensors and Actuators A: Physical, 2012, 179, 17-31.	4.1	576
97	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
98	Characterization of a capacitive tactile shear sensor for application in robotic and upper limb prostheses. Sensors and Actuators A: Physical, 2011, 165, 164-172.	4.1	61
99	Classification between non-multiple fallers and multiple fallers using a triaxial accelerometry-based system. , 2011, 2011, 1499-502.		10
100	Multivariate classification of systemic vascular resistance using photoplethysmography. Physiological Measurement, 2011, 32, 1117-1132.	2.1	22
101	Design of a decision support system using open source software for a home telehealth application. , 2011, , .		1
102	Signal quality measures for pulse oximetry through waveform morphology analysis. Physiological Measurement, 2011, 32, 369-384.	2.1	123
103	Design of an unobtrusive wireless sensor network for nighttime falls detection. , 2011, 2011, 5275-8.		19
104	Towards Using Photo-Plethysmogram Amplitude to Measure Blood Pressure During Sleep. Annals of Biomedical Engineering, 2010, 38, 945-954.	2.5	65
105	Longitudinal Falls-Risk Estimation Using Triaxial Accelerometry. IEEE Transactions on Biomedical Engineering, 2010, 57, 534-541.	4.2	81
106	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
107	Barometric Pressure and Triaxial Accelerometry-Based Falls Event Detection. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2010, 18, 619-627.	4.9	257
108	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

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109	Software simulation of unobtrusive falls detection at night-time using passive infrared and pressure mat sensors. , 2010, 2010, 2115-8.		21
110	A guideline-based decision support system for generating referral recommendations from routinely recorded home telehealth measurement data. , 2010, 2010, 6166-9.		11
111	Telehealth technologies for managing chronic disease - experiences from Australia and the UK. , 2010, 2010, 5267-9.		9
112	Online estimation of respiratory mechanics in non-invasive pressure support ventilation: A bench model study. , 2010, 2010, 2489-92.		2
113	Effect of ECG quality measures on piecewise-linear trend detection for telehealth decision support systems. , 2010, 2010, 2877-80.		2
114	Classification of low systemic vascular resistance using photoplethysmogram and routine cardiovascular measurements. , 2010, 2010, 1930-3.		9
115	Energy expenditure estimation using triaxial accelerometry and barometric pressure measurement. , 2010, 2010, 5185-8.		14
116	Ultrasound user-identification for wireless sensor networks. , 2010, 2010, 5756-9.		4
117	Automatic segmentation of triaxial accelerometry signals for falls risk estimation. , 2010, 2010, 2234-7.		16
118	Biosignal Processing to Meet the Emerging Needs of Telehealth Monitoring Environments. Lecture Notes in Electrical Engineering, 2010, , 263-280.	0.4	6
119	Can Triaxial Accelerometry Accurately Recognize Inclined Walking Terrains?. IEEE Transactions on Biomedical Engineering, 2010, 57, 2506-2516.	4.2	30
120	Biosignal quality detection: An essential feature for unsupervised telehealth applications. , 2010, , .		9
121	Classifying Torque, Normal Force and Direction Using Monkey Afferent Nerve Spike Rates. Lecture Notes in Computer Science, 2010, , 43-50.	1.3	6
122	Evaluation of functional deficits and falls risk in the elderly – methods for preventing falls. , 2009, 2009, 6179-82.		7
123	Design, simulation and fabrication of a low cost capacitive tactile shear sensor for a robotic hand. , 2009, 2009, 4132-5.		10
124	Classification of walking patterns on inclined surfaces from accelerometry data. , 2009, , .		12
125	Piecewise-linear trend detection in longitudinal physiological measurements. , 2009, 2009, 3413-6.		4
126	Falls event detection using triaxial accelerometry and barometric pressure measurement. , 2009, 2009, 6111-4.		24

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127	Denoising of magnetoencephalographic data using spatial averaging. Neurocomputing, 2008, 72, 112-118.	5.9	2
128	A wearable triaxial accelerometry system for longitudinal assessment of falls risk. , 2008, 2008, 2840-3.		29
129	ECG quality measures in telecare monitoring. , 2008, 2008, 2869-72.		36
130	Construction of Girth 8 LDPC Codes based on Multidimensional Finite Lattices. Proceedings - International Symposium on Computers and Communications, 2007, , .	0.0	0
131	A method for initialising the K-means clustering algorithm using kd-trees. Pattern Recognition Letters, 2007, 28, 965-973.	4.2	226
132	MLSP Data Analysis Competition 2006: Denoising of Magnetoencephelographic Data. , 2006, , .		2
133	Cardiorespiratory-Based Sleep Staging in Subjects With Obstructive Sleep Apnea. IEEE Transactions on Biomedical Engineering, 2006, 53, 485-496.	4.2	179
134	A Euclidean Geometry Based Algebraic Construction Technique for Girth-8 Gallager LDPC Codes. , 2006, , .		6