

Ryan Willing

List of Publications by Year in descending order

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Version: 2024-02-01

78
papers

1,006
citations

430442

18
h-index

500791

28
g-index

79
all docs

79
docs citations

79
times ranked

825
citing authors

#	ARTICLE	IF	CITATIONS
1	Comparison of proximal humeral bone stresses between stemless, short stem, and standard stem length: a finite element analysis. <i>Journal of Shoulder and Elbow Surgery</i> , 2016, 25, 1076-1083.	1.2	110
2	Contact mechanics of reverse total shoulder arthroplasty during abduction: the effect of neck-shaft angle, humeral cup depth, and glenosphere diameter. <i>Journal of Shoulder and Elbow Surgery</i> , 2016, 25, 589-597.	1.2	58
3	Three dimensional shape optimization of total knee replacements for reduced wear. <i>Structural and Multidisciplinary Optimization</i> , 2009, 38, 405-414.	1.7	47
4	Accuracy assessment of 3D bone reconstructions using CT: an intro comparison. <i>Medical Engineering and Physics</i> , 2015, 37, 729-738.	0.8	42
5	Design optimization of a total knee replacement for improved constraint and flexion kinematics. <i>Journal of Biomechanics</i> , 2011, 44, 1014-1020.	0.9	40
6	A holistic numerical model to predict strain hardening and damage of UHMWPE under multiple total knee replacement kinematics and experimental validation. <i>Journal of Biomechanics</i> , 2009, 42, 2520-2527.	0.9	38
7	Validation of a finite element model of the human elbow for determining cartilage contact mechanics. <i>Journal of Biomechanics</i> , 2013, 46, 1767-1771.	0.9	37
8	A smart knee implant using triboelectric energy harvesters. <i>Smart Materials and Structures</i> , 2019, 28, 025040.	1.8	35
9	Total Hip Wear Assessment: A Comparison Between Computational and In Vitro Wear Assessment Techniques Using ISO 14242 Loading and Kinematics. <i>Journal of Biomechanical Engineering</i> , 2009, 131, 041011.	0.6	27
10	The effect of distal humeral hemiarthroplasty on articular contact of the elbow. <i>Clinical Biomechanics</i> , 2014, 29, 537-544.	0.5	27
11	Effect of Radial Head Implant Shape on Joint Contact Area and Location During Static Loading. <i>Journal of Hand Surgery</i> , 2015, 40, 716-722.	0.7	26
12	Osseous Anatomy of the Distal Radioulnar Joint: An Assessment Using 3-Dimensional Modeling and Clinical Implications. <i>Journal of Hand Surgery</i> , 2016, 41, 1071-1079.	0.7	25
13	Identifying the Location and Volume of Bony Impingement in Elbow Osteoarthritis by 3-Dimensional Computational Modeling. <i>Journal of Hand Surgery</i> , 2013, 38, 1370-1376.	0.7	22
14	A Three-dimensional Analysis of Zygomatic Symmetry in Normal, Uninjured Faces. <i>Journal of Craniofacial Surgery</i> , 2016, 27, 504-508.	0.3	22
15	Contact analysis of the native radiocapitellar joint compared with axisymmetric and nonaxisymmetric radial head hemiarthroplasty. <i>Journal of Shoulder and Elbow Surgery</i> , 2015, 24, 787-795.	1.2	21
16	Regional Variations in Cartilage Thickness of the Radial Head: Implications for Prosthesis Design. <i>Journal of Hand Surgery</i> , 2015, 40, 2364-2371.e1.	0.7	21
17	Quantifying the competing relationship between adduction range of motion and baseplate micromotion with lateralization of reverse total shoulder arthroplasty. <i>Journal of Biomechanics</i> , 2017, 52, 24-30.	0.9	19
18	Quantifying the competing relationship between durability and kinematics of total knee replacements using multiobjective design optimization and validated computational models. <i>Journal of Biomechanics</i> , 2012, 45, 141-147.	0.9	18

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19	Development of a computational technique to measure cartilage contact area. <i>Journal of Biomechanics</i> , 2014, 47, 1193-1197.	0.9	18
20	Development and evaluation of a semi-automatic technique for determining the bilateral symmetry plane of the facial skeleton. <i>Medical Engineering and Physics</i> , 2013, 35, 1843-1849.	0.8	15
21	In vitro assessment of the contact mechanics of reverse-engineered distal humeral hemiarthroplasty prostheses. <i>Clinical Biomechanics</i> , 2014, 29, 990-996.	0.5	15
22	Measuring the sensitivity of total knee replacement kinematics and laxity to soft tissue imbalances. <i>Journal of Biomechanics</i> , 2018, 77, 62-68.	0.9	15
23	Contact mechanics of reverse engineered distal humeral hemiarthroplasty implants. <i>Journal of Biomechanics</i> , 2015, 48, 4037-4042.	0.9	13
24	Implications of Radial Head Hemiarthroplasty Dish Depth on Radiocapitellar Contact Mechanics. <i>Journal of Hand Surgery</i> , 2015, 40, 723-729.	0.7	13
25	Condylarâ€stabilized TKR May Not Fully Compensate for PCLâ€Deficiency: An In Vitro Cadaver Study. <i>Journal of Orthopaedic Research</i> , 2019, 37, 2172-2181.	1.2	13
26	Parametric study of a triboelectric transducer in total knee replacement application. <i>Journal of Intelligent Material Systems and Structures</i> , 2021, 32, 16-28.	1.4	13
27	Design and analysis of a compliant 3D printed energy harvester housing for knee implants. <i>Medical Engineering and Physics</i> , 2021, 88, 59-68.	0.8	13
28	The effect of implant design of linked total elbow arthroplasty on stability and stress: a finite element analysis. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2014, 17, 1165-1172.	0.9	12
29	The Effect of Radial Head Hemiarthroplasty Geometry on Proximal Radioulnar Joint Contact Mechanics. <i>Journal of Hand Surgery</i> , 2016, 41, 745-752.	0.7	12
30	Development and validation of a muscle wrapping model applied to intact and reverse total shoulder arthroplasty shoulders. <i>Journal of Orthopaedic Research</i> , 2018, 36, 3308-3317.	1.2	12
31	Characterization of a Packaged Triboelectric Harvester Under Simulated Gait Loading for Total Knee Replacement. <i>IEEE/ASME Transactions on Mechatronics</i> , 2021, 26, 2967-2976.	3.7	12
32	Arthrokinematics of the Distal Radioulnar Joint Measured Using Intercartilage Distance in an Inâ€Vitro Model. <i>Journal of Hand Surgery</i> , 2018, 43, 283.e1-283.e9.	0.7	10
33	Alterations in the Geometry, Fiber Orientation, and Mechanical Behavior of the Lumbar Intervertebral Disc by Nucleus Swelling. <i>Journal of Biomechanical Engineering</i> , 2020, 142, .	0.6	10
34	Application of a Novel Semi-Automatic Technique for Determining the Bilateral Symmetry Plane of the Facial Skeleton of Normal Adult Males. <i>Journal of Craniofacial Surgery</i> , 2015, 26, 1997-2001.	0.3	9
35	Revision total knee arthroplasty using a novel 3D printed titanium augment: A biomechanical cadaveric study. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020, 110, 103944.	1.5	9
36	Simulation of extracellular matrix remodeling by fibroblast cells in soft three-dimensional bioresorbable scaffolds. <i>Biomechanics and Modeling in Mechanobiology</i> , 2016, 15, 1685-1698.	1.4	8

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37	Sensitivities of lumbar segmental kinematics and functional tissue loads in sagittal bending to design parameters of a ball-in-socket total disc arthroplasty prosthesis. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2020, 23, 536-547.	0.9	8
38	Investigating the Effects of Demographics on Shoulder Morphology and Density Using Statistical Shape and Density Modeling. <i>Journal of Biomechanical Engineering</i> , 2020, 142, .	0.6	8
39	Video Analysis of the Biomechanics of a Bicycle Accident Resulting in Significant Facial Fractures. <i>Journal of Craniofacial Surgery</i> , 2013, 24, 2023-2029.	0.3	7
40	Evaluation of a computational model to predict elbow range of motion. <i>Computer Aided Surgery</i> , 2014, 19, 57-63.	1.8	7
41	Multiobjective Design Optimization of a Biconcave Mobile-Bearing Lumbar Total Artificial Disk Considering Spinal Kinematics, Facet Joint Loading, and Metal-on-Polyethylene Contact Mechanics. <i>Journal of Biomechanical Engineering</i> , 2020, 142, .	0.6	7
42	Development of a hybrid computational/experimental framework for evaluation of damage mechanisms of a linked semiconstrained total elbow system. <i>Journal of Shoulder and Elbow Surgery</i> , 2018, 27, 614-623.	1.2	6
43	Rotational Anatomy of the Radius and Ulna: Surgical Implications. <i>Journal of Hand Surgery</i> , 2020, 45, 1082.e1-1082.e9.	0.7	6
44	The Medial structures of the knee have a significant contribution to posteromedial rotational laxity control in the PCL-deficient knee. <i>Knee Surgery, Sports Traumatology, Arthroscopy</i> , 2021, 29, 4172-4181.	2.3	6
45	Maximizing range of motion of reverse total shoulder arthroplasty using design optimization techniques. <i>Journal of Biomechanics</i> , 2021, 125, 110602.	0.9	6
46	The development, calibration and validation of a numerical total knee replacement kinematics simulator considering laxity and unconstrained flexion motions. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2012, 15, 585-593.	0.9	5
47	A rigid body model for the assessment of glenohumeral joint mechanics: Influence of osseous defects on range of motion and dislocation. <i>Journal of Biomechanics</i> , 2016, 49, 514-519.	0.9	5
48	An InÂVitro Study of the Role of Implant Positioning on Ulnohumeral Articular Contact in Distal Humeral Hemiarthroplasty. <i>Journal of Hand Surgery</i> , 2017, 42, 602-609.	0.7	5
49	Comparing damage on retrieved total elbow replacement bushings with lab worn specimens subjected to varied loading conditions. <i>Journal of Orthopaedic Research</i> , 2018, 36, 1998-2006.	1.2	5
50	Biomechanical Comparison of Intramedullary Beaming and Plantar Plating Methods for Stabilizing the Medial Column of the Foot: An In Vitro Study. <i>Journal of Foot and Ankle Surgery</i> , 2018, 57, 1073-1079.	0.5	5
51	Characterizing the trade-off between range of motion and stability of reverse total shoulder arthroplasty. <i>Journal of Shoulder and Elbow Surgery</i> , 2021, 30, 2804-2813.	1.2	5
52	Effect of Dielectric Material and Package Stiffness on the Power Generation in a Packaged Triboelectric Energy Harvesting System for Total Knee Replacement. <i>Journal of Biomechanical Engineering</i> , 2021, 143, .	0.6	5
53	Applying a Hybrid Experimental-Computational Technique to Study Elbow Joint Ligamentous Stabilizers. <i>Journal of Biomechanical Engineering</i> , 2018, 140, .	0.6	4
54	Frontend Electronic System for Triboelectric Harvester in a Smart Knee Implant. , 2019, , .		4

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55	Design optimisation improves the performance of custom distal humeral hemiarthroplasty implants. <i>Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization</i> , 2019, 7, 108-115.	1.3	4
56	Development and Application of a Novel Metric to Characterize Comprehensive Range of Motion of Reverse Total Shoulder Arthroplasty. <i>Journal of Orthopaedic Research</i> , 2020, 38, 880-887.	1.2	4
57	Lateral subvastus lateralis versus medial parapatellar approach for total knee arthroplasty: A cadaveric biomechanical study. <i>Knee</i> , 2020, 27, 1735-1745.	0.8	4
58	Self-Powered Load Sensing Circuitry for Total Knee Replacement. <i>IEEE Sensors Journal</i> , 2021, 21, 22967-22975.	2.4	4
59	The Effect of Radial Head Hemiarthroplasty Geometry on Radiocapitellar Joint Contact Mechanics. <i>Journal of Shoulder and Elbow Surgery</i> , 2015, 24, e118.	1.2	3
60	Development of a Biconcave Mobile-Bearing Lumbar Total Disc Arthroplasty Concept Using Finite Element Analysis and Design Optimization. <i>Journal of Orthopaedic Research</i> , 2019, 37, 1805-1816.	1.2	3
61	Embedded sensing package for temporary bone cement spacers in infected total knee arthroplasty. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 115, 104301.	1.5	3
62	Structural analysis of hollow versus solid stemmed shoulder implants of proximal humeri with different bone qualities. <i>Journal of Orthopaedic Research</i> , 2022, 40, 674-684.	1.2	3
63	Development of a Computational Elbow Model with Experimental Validation of Kinematics and Muscle Forces. <i>Journal of Applied Biomechanics</i> , 2016, 32, 407-414.	0.3	2
64	Feasibility of Triboelectric Energy Harvesting and Load Sensing in Total Knee Replacement. , 2018, , .		2
65	Apparent Proximal Ulna Dorsal Angulation Variation Due to Ulnar Rotation. <i>Journal of Orthopaedic Trauma</i> , 2019, 33, e120-e123.	0.7	2
66	The Effect of Dorsal Angulation on Distal Radioulnar Joint Arthrokinematics Measured Using Intercartilage Distance. <i>Journal of Wrist Surgery</i> , 2019, 08, 010-017.	0.3	2
67	Analysis of a triboelectric energy harvester for total knee replacements under gait loading. , 2019, , .		2
68	Biomechanical Assessment of Knee Laxity After a Novel Posterolateral Corner Reconstruction Technique. <i>American Journal of Sports Medicine</i> , 2022, 50, 962-967.	1.9	2
69	The Effect of Radial Head Implant Design on Radiocapitellar Contact and Kinematics. <i>Journal of Shoulder and Elbow Surgery</i> , 2013, 22, e33.	1.2	1
70	Influence of the posterior cruciate ligament on kinematics of the knee during experimentally simulated clinical tests and activities of daily living. <i>Journal of Biomechanics</i> , 2021, 115, 110133.	0.9	1
71	Development of customized finite element models of medial column fixation using an intramedullary beam: A computational sensitivity analysis. <i>Medical Engineering and Physics</i> , 2021, 88, 32-40.	0.8	1
72	Does surgical approach affect patient outcomes of total knee arthroplasty?. <i>Canadian Journal of Surgery</i> , 2021, 64, E521-E526.	0.5	1

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73	Analysis of Intramedullary Beam Designs Using Customized Finite Element Models for Medial Column Arthrodesis of the Foot. <i>Journal of Foot and Ankle Surgery</i> , 2022, 61, 508-519.	0.5	1
74	Multiobjective Design Optimization of Total Knee Replacements Considering UHMWPE Damage and Kinematics. , 2008, , .		0
75	The effect of neck-shaft angle, glenosphere size, and cup depth on contact mechanics in reverse shoulder arthroplasty. <i>Journal of Shoulder and Elbow Surgery</i> , 2016, 25, e320-e322.	1.2	0
76	Trial Tibial Inserts May Result in Different Knee Kinematics from Final Poly Inserts in Total Knee Arthroplasty. <i>Orthopedic Research and Reviews</i> , 2021, Volume 13, 81-88.	0.7	0
77	Load to Failure of the Ankle Joint Complex After Fusion of the Subtalar and Talonavicular Joints: A Cadaveric Study. <i>Journal of Foot and Ankle Surgery</i> , 2021, 60, 876-880.	0.5	0
78	Wear Modeling in Artificial Knee Joints. , 2013, , 4039-4045.		0