Mehran Armand

List of Publications by Year
in descending order

82 papers	1,824 citations	279487 23 h-index	377514 34 g-index
82 all docs	82 docs citations	82 times ranked	1256 citing authors

#	Article	IF	Citations
1	Design of a new cable-driven manipulator with a large open lumen: Preliminary applications in the minimally-invasive removal of osteolysis. , 2011, , .		112
2	Mechanical Model of Dexterous Continuum Manipulators With Compliant Joints and Tendon/External Force Interactions. IEEE/ASME Transactions on Mechatronics, 2017, 22, 465-475.	3.7	74
3	Shape Tracking of a Dexterous Continuum Manipulator Utilizing Two Large Deflection Shape Sensors. IEEE Sensors Journal, 2015, 15, 5494-5503.	2.4	66
4	X-ray-transform Invariant Anatomical Landmark Detection for Pelvic Trauma Surgery. Lecture Notes in Computer Science, 2018, , 55-63.	1.0	61
5	DeepDRR â€" A Catalyst for Machine Learning in Fluoroscopy-Guided Procedures. Lecture Notes in Computer Science, 2018, , 98-106.	1.0	57
6	A Curved-Drilling Approach in Core Decompression of the Femoral Head Osteonecrosis Using a Continuum Manipulator. IEEE Robotics and Automation Letters, 2017, 2, 1480-1487.	3.3	56
7	Design and kinematic characterization of a surgical manipulator with a focus on treating osteolysis. Robotica, 2014, 32, 835-850.	1.3	52
8	Outcome of periacetabular osteotomy. Monthly Notices of the Royal Astronomical Society: Letters, 2005, 76, 303-313.	1.2	50
9	A continuum manipulator with phase changing alloy. , 2016, , .		38
10	Design of a new independently-mobile reconfigurable modular robot. , 2010, , .		37
11	Enabling machine learning in X-ray-based procedures via realistic simulation of image formation. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1517-1528.	1.7	37
12	Autonomous Data-Driven Manipulation of Unknown Anisotropic Deformable Tissues Using Unmodelled Continuum Manipulators. IEEE Robotics and Automation Letters, 2019, 4, 254-261.	3.3	37
13	Modeling Cable and Guide Channel Interaction in a High-Strength Cable-Driven Continuum Manipulator. IEEE/ASME Transactions on Mechatronics, 2015, 20, 2876-2889.	3.7	36
14	A Robust Data-Driven Approach for Online Learning and Manipulation of Unmodeled 3-D Heterogeneous Compliant Objects. IEEE Robotics and Automation Letters, 2018, 3, 4140-4147.	3.3	36
15	A Surgical Robotic System for Treatment of Pelvic Osteolysis Using an FBG-Equipped Continuum Manipulator and Flexible Instruments. IEEE/ASME Transactions on Mechatronics, 2021, 26, 369-380.	3.7	36
16	Development and Experimental Evaluation of Concurrent Control of a Robotic Arm and Continuum Manipulator for Osteolytic Lesion Treatment. IEEE Robotics and Automation Letters, 2017, 2, 1625-1631.	3.3	35
17	Data-Driven Shape Sensing of a Surgical Continuum Manipulator Using an Uncalibrated Fiber Bragg Grating Sensor. IEEE Sensors Journal, 2021, 21, 3066-3076.	2.4	35
18	Automatic annotation of hip anatomy in fluoroscopy for robust and efficient 2D/3D registration. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 759-769.	1.7	33

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19	Plan in 2-D, execute in 3-D: an augmented reality solution for cup placement in total hip arthroplasty. Journal of Medical Imaging, 2018, 5, 1.	0.8	32
20	A continuum manipulator made of interlocking fibers. , 2013, , .		30
21	Subject-specific planning of femoroplasty: An experimental verification study. Journal of Biomechanics, 2015, 48, 59-64.	0.9	28
22	Cable length estimation for a compliant surgical manipulator. , 2012, , .		27
23	First In-Human Experience With Complete Integration of Neuromodulation Device Within a Customized Cranial Implant. Operative Neurosurgery, 2018, 15, 39-45.	0.4	27
24	Augmented Reality for Acetabular Component Placement in Direct Anterior Total Hip Arthroplasty. Journal of Arthroplasty, 2020, 35, 1636-1641.e3.	1.5	27
25	The Impact of Machine Learning on 2D/3D Registration for Image-Guided Interventions: A Systematic Review and Perspective. Frontiers in Robotics and AI, 2021, 8, 716007.	2.0	27
26	Closing the Calibration Loop: An Inside-Out-Tracking Paradigm for Augmented Reality in Orthopedic Surgery. Lecture Notes in Computer Science, 2018, , 299-306.	1.0	27
27	SCADE: Simultaneous Sensor Calibration and Deformation Estimation of FBG-Equipped Unmodeled Continuum Manipulators. IEEE Transactions on Robotics, 2020, 36, 222-239.	7.3	26
28	FBG-Based Position Estimation of Highly Deformable Continuum Manipulators: Model-Dependent vs. Data-Driven Approaches. , 2019, , .		25
29	High-Resolution Optical Fiber Shape Sensing of Continuum Robots: A Comparative Study. , 2020, 2020, .		25
30	Toward Semi-autonomous Cryoablation of Kidney Tumors via Model-Independent Deformable Tissue Manipulation Technique. Annals of Biomedical Engineering, 2018, 46, 1650-1662.	1.3	24
31	Learning to detect anatomical landmarks of the pelvis in X-rays from arbitrary views. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1463-1473.	1.7	24
32	Large deflection shape sensing of a continuum manipulator for minimally-invasive surgery. , 2015, 2015, 201-206.		23
33	A highly sensitive fiber Bragg Grating shape sensor for continuum manipulators with large deflections. , 2017, , .		23
34	Interactive Flying Frustums (IFFs): spatially aware surgical data visualization. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 913-922.	1.7	23
35	An Active Steering Hand-Held Robotic System for Minimally Invasive Orthopaedic Surgery Using a Continuum Manipulator. IEEE Robotics and Automation Letters, 2021, 6, 1622-1629.	3.3	23
36	Outcome of periacetabular osteotomy: joint contact pressure calculation using standing AP radiographs, 12 patients followed for average 2 years. Monthly Notices of the Royal Astronomical Society: Letters, 2005, 76, 303-13.	1.2	23

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37	Constrained workspace generation for snake-like manipulators with applications to minimally invasive surgery. , 2013, , .		22
38	Design and characterization of a debriding tool in robot-assisted treatment of osteolysis. , 2016, , .		22
39	Reflective-AR Display: An Interaction Methodology for Virtual-to-Real Alignment in Medical Robotics. IEEE Robotics and Automation Letters, 2020, 5, 2722-2729.	3.3	22
40	FBG-based large deflection shape sensing of a continuum manipulator: Manufacturing optimization. , 2016, , .		21
41	Pose Estimation of Periacetabular Osteotomy Fragments With Intraoperative X-Ray Navigation. IEEE Transactions on Biomedical Engineering, 2020, 67, 441-452.	2.5	21
42	FBG-Based Control of a Continuum Manipulator Interacting with Obstacles. , 2018, , .		20
43	The Posterior Capsular Ligamentous Complex Contributes to Hip Joint Stability in Distraction. Journal of Arthroplasty, 2018, 33, 919-924.	1.5	19
44	Fiducial-Free 2D/3D Registration for Robot-Assisted Femoroplasty. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 437-446.	2.1	19
45	Progress toward robotic surgery of the lateral skull base: Integration of a dexterous continuum manipulator and flexible ring curette. , 2016, , .		18
46	Pose-aware C-arm for automatic re-initialization of interventional 2D/3D image registration. International Journal of Computer Assisted Radiology and Surgery, 2017, 12, 1221-1230.	1.7	18
47	Subject-specific planning of femoroplasty: A combined evolutionary optimization and particle diffusion model approach. Journal of Biomechanics, 2014, 47, 2237-2243.	0.9	17
48	A Dexterous Robotic System for Autonomous Debridement of Osteolytic Bone Lesions in Confined Spaces: Human Cadaver Studies. IEEE Transactions on Robotics, 2022, 38, 1213-1229.	7.3	17
49	Biomechanical Factors in Planning of Periacetabular Osteotomy. Frontiers in Bioengineering and Biotechnology, 2013, 1, 20.	2.0	16
50	Clinical evaluation of a biomechanical guidance system for periacetabular osteotomy. Journal of Orthopaedic Surgery and Research, 2016, 11, 36.	0.9	15
51	Towards clinical translation of augmented orthopedic surgery: from pre-op CT to intra-op x-ray via RGBD sensing. , 2018, , .		15
52	Fluoroscopic Navigation for a Surgical Robotic System Including a Continuum Manipulator. IEEE Transactions on Biomedical Engineering, 2022, 69, 453-464.	2.5	14
53	Modeling the biomechanics of swine mastication â€" An inverse dynamics approach. Journal of Biomechanics, 2014, 47, 2626-2632.	0.9	13
54	Fiducial-free 2D/3D registration of the proximal femur for robot-assisted femoroplasty. , 2020, , .		12

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55	Co-localized augmented human and X-ray observers in collaborative surgical ecosystem. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1553-1563.	1.7	11
56	An image-guided femoroplasty system: development and initial cadaver studies. Proceedings of SPIE, 2010, , .	0.8	10
57	On the effect of vibration on shape sensing of continuum manipulators using fiber Bragg gratings. , 2018, , .		10
58	Towards real-time shape sensing of continuum manipulators utilizing fiber Bragg grating sensors. , 2016, , .		9
59	A Convex Optimization Framework for Constrained Concurrent Motion Control of a Hybrid Redundant Surgical System. , 2018, , .		9
60	Patch-Based Image Similarity for Intraoperative 2D/3D Pelvis Registration During Periacetabular Osteotomy. Lecture Notes in Computer Science, 2018, , 153-163.	1.0	9
61	Inroads Toward Robot-Assisted Internal Fixation of Bone Fractures Using a Bendable Medical Screw and the Curved Drilling Technique. , 2018, 2018, 595-600.		9
62	Reliability of computer-assisted periacetabular osteotomy using a minimally invasive approach. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 2021-2028.	1.7	8
63	Development and Pre-Clinical Analysis of Spatiotemporal-Aware Augmented Reality in Orthopedic Interventions. IEEE Transactions on Medical Imaging, 2021, 40, 765-778.	5.4	8
64	A Craniomaxillofacial Surgical Assistance Workstation for Enhanced Single-Stage Reconstruction Using Patient-Specific Implants. Journal of Craniofacial Surgery, 2016, 27, 2025-2030.	0.3	6
65	Virtual reality technologies for clinical education: evaluation metrics and comparative analysis. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2021, 9, 233-242.	1.3	6
66	Learning to Detect Collisions for Continuum Manipulators Without a Prior Model. Lecture Notes in Computer Science, 2019, , 182-190.	1.0	6
67	Automatic intraoperative stitching of nonoverlapping coneâ€beam <scp>CT</scp> acquisitions. Medical Physics, 2018, 45, 2463-2475.	1.6	5
68	Significance of preoperative planning for prophylactic augmentation of osteoporotic hip: A computational modeling study. Journal of Biomechanics, 2019, 94, 75-81.	0.9	5
69	Comparative Biomechanical Study of Screw Fixation Techniques in Periacetabular Osteotomy. Biomechanics, 2021, 1, 131-144.	0.5	5
70	Reconstruction of Orthographic Mosaics From Perspective X-Ray Images. IEEE Transactions on Medical Imaging, 2021, 40, 3165-3177.	5.4	5
71	Biomechanical Guidance System for Periacetabular Osteotomy. Advances in Experimental Medicine and Biology, 2018, 1093, 169-179.	0.8	4
72	On the effectiveness of virtual reality-based training for surgical robot setup. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2021, 9, 243-252.	1.3	4

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73	A Biomechanical Study on the Use of Curved Drilling Technique for Treatment of Osteonecrosis of Femoral Head. , 2020, , 87-97.		4
74	A portable projection mapping device for medical augmented reality in single-stage cranioplasty. , 2020, , .		4
75	A biomechanically-guided planning and execution paradigm for osteoporotic hip augmentation: Experimental evaluation of the biomechanics and temperature-rise. Clinical Biomechanics, 2021, 87, 105392.	0.5	3
76	Exploring partial intrinsic and extrinsic symmetry in 3D medical imaging. Medical Image Analysis, 2021, 72, 102127.	7.0	3
77	EVALUATION OF A BONE REINFORCEMENT TECHNIQUE USING FINITE ELEMENT ANALYSIS. Acta Ortopedica Brasileira, 2018, 26, 59-62.	0.2	2
78	Vibration€based drilling depth estimation of bone. International Journal of Medical Robotics and Computer Assisted Surgery, 2021, 17, e2233.	1.2	2
79	Feasibility of a Cannula-Mounted Piezo Robot for Image-Guided Vertebral Augmentation: Toward a Low Cost, Semi-Autonomous Approach. , 2021, , .		2
80	A Biomechanical and Thermal Analysis for Bone Augmentation of the Proximal Femur. , 2018, 3, .		1
81	Automated Implant Resizing for Single-Stage Cranioplasty. IEEE Robotics and Automation Letters, 2021, 6, 6624-6631.	3.3	1
82	Buckybot: A Robot Based on the Geometry of a Truncated Icosahedron. , 2014, , .		0