Murat Cenk Cavusoglu

List of Publications by Year
in descending order

88 papers	2,168 citations	304368 22 h-index	276539 41 g-index
89 all docs	89 docs citations	89 times ranked	1906 citing authors

#	Article	IF	Citations
1	A Critical Study of the Mechanical and Electrical Properties of the PHANToM Haptic Interface and Improvements for Highperformance Control. Presence: Teleoperators and Virtual Environments, 2002, 11, 555-568.	0.3	199
2	In Touch with Robotics: Neurosurgery for the Future. Neurosurgery, 2005, 56, 421-433.	0.6	177
3	Personal Navigation via High-Resolution Gait-Corrected Inertial Measurement Units. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 3018-3027.	2.4	142
4	Intelligent control algorithms for robotic-assisted beating heart surgery. IEEE Transactions on Robotics, 2007, 23, 468-480.	7.3	129
5	A Virtual Environment Testbed for Training Laparoscopic Surgical Skills. Presence: Teleoperators and Virtual Environments, 2000, 9, 236-255.	0.3	126
6	A laparoscopic telesurgical workstation. IEEE Transactions on Automation Science and Engineering, 1999, 15, 728-739.	2.4	104
7	Robotics for telesurgery: second generation Berkeley/UCSF laparoscopic telesurgical workstation and looking towards the future applications. Industrial Robot, 2003, 30, 22-29.	1.2	103
8	Design and Characterization of a Novel Hybrid Actuator Using Shape Memory Alloy and DC Micromotor for Minimally Invasive Surgery Applications. IEEE/ASME Transactions on Mechatronics, 2007, 12, 455-464.	3.7	63
9	Virtual reality simulation: basic concepts and use in endoscopic neurosurgery training. Child's Nervous System, 2013, 29, 1235-1244.	0.6	57
10	Estimation of Soft Tissue Mechanical Parameters From Robotic Manipulation Data. IEEE/ASME Transactions on Mechatronics, 2013, 18, 1602-1611.	3.7	57
11	Needle path planning for autonomous robotic surgical suturing. , 2013, 2013, 1669-1675.		54
12	Heart Motion Prediction Based on Adaptive Estimation Algorithms for Robotic-Assisted Beating Heart Surgery. IEEE Transactions on Robotics, 2013, 29, 261-276.	7.3	49
13	Design of a Parallel Robot for Needle-Based Interventions on Small Animals. IEEE/ASME Transactions on Mechatronics, 2013, 18, 62-73.	3.7	41
14	GiPSi: A Framework for Open Source/Open Architecture Software Development for Organ-Level Surgical Simulation. IEEE Transactions on Information Technology in Biomedicine, 2006, 10, 312-322.	3.6	39
15	Human-Arm-and-Hand-Dynamic Model With Variability Analyses for a Stylus-Based Haptic Interface. IEEE Transactions on Systems, Man, and Cybernetics, 2012, 42, 1633-1644.	5.5	38
16	Modeling and Validation of the Three-Dimensional Deflection of an MRI-Compatible Magnetically Actuated Steerable Catheter. IEEE Transactions on Biomedical Engineering, 2016, 63, 2142-2154.	2.5	38
17	Iterative Jacobian-Based Inverse Kinematics and Open-Loop Control of an MRI-Guided Magnetically Actuated Steerable Catheter System. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1765-1776.	3.7	36
18	Needle Grasp and Entry Port Selection for Automatic Execution of Suturing Tasks in<?Pub _newline ?>Robotic Minimally Invasive Surgery. IEEE Transactions on Automation Science and Engineering, 2016, 13, 552-563.	3.4	29

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19	Determination of elasticity parameters in lumped element (mass-spring) models of deformable objects. Graphical Models, 2010, 72, 61-73.	1.1	27
20	Three dimensional modeling of an MRI actuated steerable catheter system. , 2014, 2014, 4393-4398.		27
21	Real-Time Visual Tracking of Dynamic Surgical Suture Threads. IEEE Transactions on Automation Science and Engineering, 2018, 15, 1078-1090.	3.4	27
22	Camera-Robot Calibration for the Da Vinci Robotic Surgery System. IEEE Transactions on Automation Science and Engineering, 2020, 17, 2154-2161.	3.4	27
23	Whisker-Like Position Sensor for Measuring Physiological Motion. IEEE/ASME Transactions on Mechatronics, 2008, 13, 538-547.	3.7	25
24	Vision-Based Surgical Tool Pose Estimation for the da VinciÂ® Robotic Surgical System. , 2018, 2018, 1298-1305.		24
25	Jacobian-Based Task-Space Motion Planning for MRI-Actuated Continuum Robots. IEEE Robotics and Automation Letters, 2019, 4, 145-152.	3.3	24
26	State of the Art and Future Opportunities in MRI-Guided Robot-Assisted Surgery and Interventions. Proceedings of the IEEE, 2022, 110, 968-992.	16.4	23
27	Improved prediction of heart motion using an adaptive filter for robot assisted beating heart surgery. , 2007, , .		22
28	Modeling of needle-tissue interaction forces during surgical suturing. , 2012, 2012, 4675-4680.		22
29	Quantitative Comparison of Bilateral Teleoperation Systems Using <formula formulatype="inline"><tex>mu</tex></formula>-Synthesis. , 2007, 23, 776-789.		20
30	Task-space motion planning of MRI-actuated catheters for catheter ablation of atrial fibrillation. , 2014, 2014, 3476-3482.		20
31	Pseudo-rigid-body model and kinematic analysis of MRI-actuated catheters. , 2015, 2015, 2263-2243.		20
32	Personal navigation via shoe mounted inertial measurement units. , 2010, , .		19
33	Whisker Sensor Design for Three Dimensional Position Measurement in Robotic Assisted Beating Heart Surgery. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	18
34	Personal Inertial Navigation System Assisted by MEMS Ground Reaction Sensor Array and Interface ASIC for GPS-Denied Environment. IEEE Journal of Solid-State Circuits, 2018, 53, 3039-3049.	3.5	18
35	Design of a Magnetic Resonance Imaging Guided Magnetically Actuated Steerable Catheter. Journal of Medical Devices, Transactions of the ASME, 2017, 11, 0210041-2100411.	0.4	16
36	Prediction of heartbeat motion with a generalized adaptive filter. , 2008, , .		15

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37	Experimental validation of the pseudo-rigid-body model of the MRI-actuated catheter. , 2017, 2017, 3600-3605.		15
38	GiPSi: An Open Source/Open Architecture Software Development Framework for Surgical Simulation. Lecture Notes in Computer Science, 2004, , 240-248.	1.0	15
39	Optimal needle grasp selection for automatic execution of suturing tasks in robotic minimally invasive surgery. , 2015, 2015, 2894-2900.		14
40	Towards Active Tracking of Beating Heart Motion in the Presence of Arrhythmia for Robotic Assisted Beating Heart Surgery. PLoS ONE, 2014, 9, e102877.	1.1	14
41	Automatic initialization and dynamic tracking of surgical suture threads. , 2015, 2015, 4710-4716.		13
42	Virtual environment-based training simulator for endoscopic third ventriculostomy. Studies in Health Technology and Informatics, 2006, 119, 73-5.	0.2	13
43	A Detection Scheme for Frontalis and Temporalis Muscle EMG Contamination of EEG Data. , 2006, 2006, 4514-8.		12
44	Needle-tissue interaction force state estimation for robotic surgical suturing. , 2016, 2016, 3659-3664.		12
45	Three-Dimensional Surgical Needle Localization and Tracking Using Stereo Endoscopic Image Streams. , 2018, 2018, 6617-6624.		12
46	Effect of visuo-haptic co-location on 3D Fitts' task performance. , 2011, 2011, 3460-3467.		11
47	Estimation of soft tissue mechanical parameters from robotic manipulation data. , 2012, 2012, 4667-4674.		11
48	Design of a framework for modeling, integration and simulation of physiological models. Computer Methods and Programs in Biomedicine, 2012, 107, 524-537.	2.6	11
49	Description of Instantaneous Restriction Space for Multi-DOFs Bilateral Teleoperation Systems Using Position Sensors in Unstructured Environments. IEEE Transactions on Robotics, 2009, 25, 1150-1158.	7.3	10
50	High Fidelity Haptic Rendering of Frictional Contact with Deformable Objects in Virtual Environments using Multi-rate Simulation. International Journal of Robotics Research, 2010, 29, 1778-1792.	5.8	10
51	Identification and active exploration of deformable object boundary constraints through robotic manipulation. International Journal of Robotics Research, 2014, 33, 1446-1461.	5.8	10
52	Three-dimensional human arm and hand dynamics and variability model for a stylus-based haptic interface. , 2010, , .		9
53	Active localization and tracking of needle and target in robotic image-guided intervention systems. Autonomous Robots, 2018, 42, 83-97.	3.2	9
54	Design of a small animal biopsy robot. , 2008, 2008, 5601-4.		8

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55	Kinematic calibration of a parallel robot for small animal biopsies. , 2009, , .		8
56	Model Based Control Algorithms for Robotic Assisted Beating Heart Surgery. , 2006, 2006, 823-8.		7
57	Particle filter based active localization of target and needle in robotic image-guided intervention systems. , 2013, 2013, 448-454.		7
58	Catadioptric stereo tracking for three dimensional shape measurement of MRI guided catheters. , 2016, 2016, 4422-4428.		7
59	Heart motion measurement with three dimensional sonomicrometry and acceleration sensing. , 2012, 2012, 4143-4149.		6
60	Effect of Visuomotor Colocation on 3D Fitts' Task Performance in Physical and Virtual Environments. Presence: Teleoperators and Virtual Environments, 2012, 21, 305-320.	0.3	5
61	Calibration of 2D Ultrasound in 3D space for Robotic biopsies. , 2015, , .		5
62	Parameter optimization of pseudo-rigid-body models of MRI-actuated catheters. , 2016, 2016, 5112-5115.		5
63	Contact Stability and Contact Safety of a Magnetic Resonance Imaging-Guided Robotic Catheter Under Heart Surface Motion. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2021, 143, 071010.	0.9	4
64	Dual-Arm Needle Manipulation with the da Vinci^{Â®}Surgical Robot. , 2020, , .		4
65	Analysis of Dynamic Response of an MRI-Guided Magnetically-Actuated Steerable Catheter System. , 2018, , .		3
66	Task-Oriented Active Sensing via Action Entropy Minimization. IEEE Access, 2019, 7, 135413-135426.	2.6	3
67	A Framework for Quantitative Comparison of Bilateral Teleoperation Systems Using /spl mu/-Synthesis. , 2007, , .		2
68	High Fidelity Haptic Rendering of Stick-Slip Frictional Contact With Deformable Objects in Virtual Environments Using Multi-Rate Simulation. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	2
69	Contact Stability Analysis of Magnetically-Actuated Robotic Catheter Under Surface Motion. , 2020, 2020, 4455-4462.		2
70	A Detection Scheme for Frontalis and Temporalis Muscle EMG Contamination of EEG Data. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	2
71	Analysis of Dynamic Response of an MRI-Guided Magnetically-Actuated Steerable Catheter System. IEEE International Conference on Intelligent Robots and Systems, 2018, 2018, 4927-4934.	0.6	2
72	Analysis of Contact Stability and Contact Safety of a Robotic Intravascular Cardiac Catheter under Blood Flow Disturbances. , 2020, 2020, 3216-3223.		2

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73	Design of a framework for modeling, integration and simulation of physiological models. , 2010, 2010, 1485-9.		1
74	Fault Localization in Embedded Control System Software. , 2015, , .		1
75	Active sensing for continuous state and action spaces via task-action entropy minimization. , 2016, 2016, 4678-4684.		1
76	A Probabilistic Approach for Contact Stability and Contact Safety Analysis of Robotic Intracardiac Catheter. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2021, 143, 094502.	0.9	1
77	Model Based Control Algorithms for Robotic Assisted Beating Heart Surgery. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	1
78	Analysis of Contact Stability and Contact Safety of a Robotic Intravascular Cardiac Catheter under Blood Flow Disturbances. IEEE International Conference on Intelligent Robots and Systems, 2020, 2020, 3216-3223.	0.6	1
79	Differential Image Based Robot to MRI Scanner Registration with Active Fiducial Markers for an MRI-Guided Robotic Catheter System. , 2020, 2020, 2958-2964.		1
80	Localization of Point-of-Interest Positions on Cardiac Surface for Robotic-Assisted Beating Heart Surgery. , 2021, 2021, 4566-4569.		1
81	Quantitative Comparison of Bilateral Teleoperation Systems with Various Drive Mechanisms and Sensory Configurations. , 2006, , .		0
82	Restriction Space Projection method for position sensor based force reflection of multi degrees-of-freedom bilateral teleoperation systems in unstructured environments. , 2010, , .		0
83	State Estimation for MRI-Actuated Cathers via Catadioptric Stereo Camera. , 2018, 2018, 1795-1800.		0
84	Dual-Arm Needle Manipulation with the da VinciÂ® Surgical Robot Under Uncertainty. , 2021, , .		0
85	Towards the Development of a Robotic System for Beating Heart Surgery. , 2011, , 525-556.		0
86	Differential Image Based Robot to MRI Scanner Registration with Active Fiducial Markers for an MRI-Guided Robotic Catheter System. IEEE International Conference on Intelligent Robots and Systems, 2020, 2020, 2958-2964.	0.6	0
87	Effect of sensor and actuator quality on robot swarm algorithm performance. , 2011, , .		0
88	Effect of visuo-haptic co-location on 3D Fitts' task performance. , 2011, , .		0