Paolo Fiorini

List of Publications by Year
in descending order

125 papers	3,919 citations	236612 25 h-index	133063 59 g-index
130 all docs	130 docs citations	130 times ranked	3219 citing authors

#	Article	IF	Citations
1	Motion Planning in Dynamic Environments Using Velocity Obstacles. International Journal of Robotics Research, 1998, 17, 760-772.	5.8	1,362
2	A Review of Algorithms for Compliant Control of Stiff and Fixed-Compliance Robots. IEEE/ASME Transactions on Mechatronics, 2016, 21, 613-624.	3.7	213
3	A Design and Control Environment for Internet-Based Telerobotics. International Journal of Robotics Research, 1998, 17, 433-449.	5.8	179
4	A PLS-Based Statistical Approach for Fault Detection and Isolation of Robotic Manipulators. IEEE Transactions on Industrial Electronics, 2012, 59, 3167-3175.	5.2	176
5	An Energy Tank-Based Interactive Control Architecture for Autonomous and Teleoperated Robotic Surgery. IEEE Transactions on Robotics, 2015, 31, 1073-1088.	7.3	142
6	A Short History of Cleaning Robots. Autonomous Robots, 2000, 9, 211-226.	3.2	112
7	Current Capabilities and Development Potential in Surgical Robotics. International Journal of Advanced Robotic Systems, 2015, 12, 61.	1.3	95
8	The Development of Hopping Capabilities for Small Robots. Autonomous Robots, 2003, 14, 239-254.	3.2	76
9	A Parallel-Elastic Actuator for a Torque-Controlled Back-Support Exoskeleton. IEEE Robotics and Automation Letters, 2018, 3, 492-499.	3.3	69
10	Impedance control of series elastic actuators: Passivity and acceleration-based control. Mechatronics, 2017, 47, 37-48.	2.0	67
11	FILOSE for Svenning: A Flow Sensing Bioinspired Robot. IEEE Robotics and Automation Magazine, 2014, 21, 51-62.	2.2	62
12	Human-adaptive control of series elastic actuators. Robotica, 2014, 32, 1301-1316.	1.3	57
13	Robust Force Control of Series Elastic Actuators. Actuators, 2014, 3, 182-204.	1.2	47
14	Multi-task temporal convolutional networks for joint recognition of surgical phases and steps in gastric bypass procedures. International Journal of Computer Assisted Radiology and Surgery, 2021, 16, 1111-1119.	1.7	46
15	Robotic Surgery. IEEE Robotics and Automation Magazine, 2011, 18, 24-32.	2.2	41
16	A Rationale for Acceleration Feedback in Force Control of Series Elastic Actuators. IEEE Transactions on Robotics, 2018, 34, 48-61.	7.3	41
17	Soft Robotic Manipulator for Improving Dexterity in Minimally Invasive Surgery. Surgical Innovation, 2018, 25, 69-76.	0.4	40
18	Development of a Cognitive Robotic System for Simple Surgical Tasks. International Journal of Advanced Robotic Systems, 2015, 12, 37.	1.3	35

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19	Cleaning and Household Robots: A Technology Survey. Autonomous Robots, 2000, 9, 227-235.	3.2	33
20	Understanding Environment-Adaptive Force Control of Series Elastic Actuators. IEEE/ASME Transactions on Mechatronics, 2018, 23, 413-423.	3.7	32
21	Switching control approach for stable navigation of mobile robots in unknown environments. Robotics and Computer-Integrated Manufacturing, 2011, 27, 558-568.	6.1	31
22	A Deformable Smart Skin for Continuous Sensing Based on Electrical Impedance Tomography. Sensors, 2016, 16, 1928.	2.1	30
23	Overcoming some drawbacks of Dynamic Movement Primitives. Robotics and Autonomous Systems, 2021, 144, 103844.	3.0	30
24	A SystemC/Matlab co-simulation tool for networked control systems. Simulation Modelling Practice and Theory, 2012, 23, 71-86.	2.2	25
25	Dynamic Movement Primitives: Volumetric Obstacle Avoidance Using Dynamic Potential Functions. Journal of Intelligent and Robotic Systems: Theory and Applications, 2021, 101, 1.	2.0	25
26	Impedance control of series elastic actuators based on well-defined force dynamics. Robotics and Autonomous Systems, 2017, 96, 81-92.	3.0	24
27	Robust Real-Time Needle Tracking in 2-D Ultrasound Images Using Statistical Filtering. IEEE Transactions on Control Systems Technology, 2017, 25, 966-978.	3.2	23
28	A Cognitive Robot Control Architecture for Autonomous Execution of Surgical Tasks. Journal of Medical Robotics Research, 2016, 01, 1650008.	1.0	22
29	Dynamic Movement Primitives: Volumetric Obstacle Avoidance. , 2019, , .		22
30	Improving Rigid 3-D Calibration for Robotic Surgery. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 569-573.	2.1	22
31	Towards automated surgical robotics: A requirements engineering approach. , 2012, , .		21
32	Autonomous task planning and situation awareness in robotic surgery. , 2020, , .		21
33	Localization and Sensing for Hopping Robots. Autonomous Robots, 2005, 18, 185-200.	3.2	20
34	Design and Integration of Electrical Bio-impedance Sensing in Surgical Robotic Tools for Tissue Identification and Display. Frontiers in Robotics and AI, 2019, 6, 55.	2.0	20
35	Needle and Biopsy Robots: a Review. Current Robotics Reports, 2021, 2, 73-84.	5.1	20
36	Industry 4.0 and prospects of circular economy: a survey of robotic assembly and disassembly. International Journal of Advanced Manufacturing Technology, 2023, 124, 2973-3000.	1.5	20

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37	Concepts and Trends in Autonomy for Robot-Assisted Surgery. Proceedings of the IEEE, 2022, 110, 993-1011.	16.4	20
38	Service robotics (the rise and bloom of service robots) [tc spotlight]. IEEE Robotics and Automation Magazine, 2013, 20, 22-24.	2.2	18
39	Calibration of mass spring models for organ simulations. , 2007, , .		16
40	Introducing service robotics to the pharmaceutical industry. Intelligent Service Robotics, 2008, 1, 267-280.	1.6	16
41	A knowledge-based framework for task automation in surgery. , 2019, , .		15
42	GPU-based physical cut in interactive haptic simulations. International Journal of Computer Assisted Radiology and Surgery, 2011, 6, 265-272.	1.7	13
43	Real-time biopsy needle tip estimation in 2D ultrasound images. , 2013, , .		12
44	Stability analysis of the linear discrete teleoperation systems with stochastic sampling and data dropout. European Journal of Control, 2018, 41, 63-71.	1.6	12
45	Position-based modeling of lesion displacement in ultrasound-guided breast biopsy. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1329-1339.	1.7	12
46	Toward autonomous robotic prostate biopsy: a pilot study. International Journal of Computer Assisted Radiology and Surgery, 2021, 16, 1393-1401.	1.7	12
47	An Electrical Bioimpedance Scanning System for Subsurface Tissue Detection in Robot Assisted Minimally Invasive Surgery. IEEE Transactions on Biomedical Engineering, 2022, 69, 209-219.	2.5	12
48	Surgical gesture recognition with time delay neural network based on kinematic data. , 2019, , .		11
49	FPGA-based Controller for Haptic Devices. , 2006, , .		10
50	Trajectory planning with task constraints in densely filled environments. , 2010, , .		10
51	Formal verification of robotic surgery tasks by reachability analysis. Microprocessors and Microsystems, 2015, 39, 836-842.	1.8	10
52	Unsupervised Identification of Surgical Robotic Actions From Small Non-Homogeneous Datasets. IEEE Robotics and Automation Letters, 2021, 6, 8205-8212.	3.3	10
53	Physics-Based Deep Neural Network for Real-Time Lesion Tracking in Ultrasound-Guided Breast Biopsy. , 2020, , 33-45.		10
54	Parametric formal verification: the robotic paint spraying case study. IFAC-PapersOnLine, 2017, 50, 9248-9253.	0.5	8

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55	Actuation Selection for Assistive Exoskeletons: Matching Capabilities to Task Requirements. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 2053-2062.	2.7	8
56	Automatic detection of procedural knowledge in robotic-assisted surgical texts. International Journal of Computer Assisted Radiology and Surgery, 2021, 16, 1287-1295.	1.7	8
57	Data-Driven Intra-Operative Estimation of Anatomical Attachments for Autonomous Tissue Dissection. IEEE Robotics and Automation Letters, 2021, 6, 1856-1863.	3.3	8
58	A flexible sensor for soft-bodied robots based on electrical impedance tomography. , 2018, , .		7
59	Iterative simulations to estimate the elastic properties from a series of MRI images followed by MRI-US validation. Medical and Biological Engineering and Computing, 2019, 57, 913-924.	1.6	7
60	Biomechanical modelling of probe to tissue interaction during ultrasound scanning. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1379-1387.	1.7	7
61	Modeling of Surgical Procedures Using Statecharts for Semi-Autonomous Robotic Surgery. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 888-899.	2.1	7
62	Autonomous tissue retraction with a biomechanically informed logic based framework. , 2021, , .		7
63	Statistical methods for estimating the dynamical parameters of manipulators. , 2009, , .		6
64	Integration of New Features for Telerobotic Surgery into The Mirosurge System. Applied Bionics and Biomechanics, 2011, 8, 253-265.	0.5	6
65	Generalized Shapes and Point Sets Correspondence and Registration. Journal of Mathematical Imaging and Vision, 2015, 52, 218-233.	0.8	6
66	Introducing Series Elastic Links for Affordable Torque-Controlled Robots. IEEE Robotics and Automation Letters, 2019, 4, 137-144.	3.3	6
67	Towards inductive learning of surgical task knowledge: a preliminary case study of the peg transfer task. Procedia Computer Science, 2020, 176, 440-449.	1.2	6
68	Inductive learning of answer set programs for autonomous surgical task planning. Machine Learning, 2021, 110, 1739-1763.	3.4	6
69	Intra-operative Update of Boundary Conditions for Patient-Specific Surgical Simulation. Lecture Notes in Computer Science, 2021, , 373-382.	1.0	6
70	Design and Integration of Electrical Bio-Impedance Sensing in a Bipolar Forceps for Soft Tissue Identification: A Feasibility Study. IFMBE Proceedings, 2020, , 3-10.	0.2	6
71	Distortion and instability compensation with deep learning for rotational scanning endoscopic optical coherence tomography. Medical Image Analysis, 2022, 77, 102355.	7.0	6
72	Preclinical Validation of a Semi-Autonomous Robot for Transperineal Prostate Biopsy. IEEE Transactions on Medical Robotics and Bionics, 2022, 4, 311-322.	2.1	6

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73	Neural Networks for the Segmentation of Teleoperation Tasks. Presence: Teleoperators and Virtual Environments, 1993, 2, 54-65.	0.3	5
74	Predictive control of networked control systems over differentiated services lossy networks. , 2012, , .		5
75	Cutaneous feedback in teleoperated robotic hands. , 2016, , .		5
76	Approaches for Action Sequence Representation in Robotics: A Review. , 2018, , .		5
77	On cyber-physical attacks in bilateral teleoperation systems: An experimental analysis. , 2018, , .		5
78	Double Deep Q-Network for Trajectory Generation of a Commercial 7DOF Redundant Manipulator. , 2019, , .		5
79	Robotically assisted electrical bio-impedance measurements for soft tissue characterization: a feasibility study. , 2019, , .		5
80	The role of visual-haptic discrepancy in virtual reality environments. , 2012, , .		4
81	A two-layer approach for shared control in semi-autonomous robotic surgery. , 2015, , .		4
82	A unified representation to interact with simulated deformable objects in virtual environments. , 2016, , .		4
83	An Auto-Focusing System for Endoscopic Laser Surgery based on a Hydraulic MEMS Varifocal Mirror. , 2019, , .		4
84	Causal interaction modeling on ultra-processed food manufacturing. , 2020, , .		4
85	Industrial Time Series Modeling With Causal Precursors and Separable Temporal Convolutions. IEEE Robotics and Automation Letters, 2021, 6, 6939-6946.	3.3	4
86	Rigid 3D Registration of Pre-operative Information for Semi-Autonomous Surgery. , 2020, , .		4
87	Robot assisted electrical impedance scanning for tissue bioimpedance spectroscopy measurement. Measurement: Journal of the International Measurement Confederation, 2022, 195, 111112.	2.5	4
88	Deliberation in autonomous robotic surgery: a framework for handling anatomical uncertainty. , 2022, , .		4
89	Application of contract-based verification techniques for hybrid automata to surgical robotic systems. , 2014, , .		3
90	BIPCO: ultrasound feature points based on phase congruency detector and binary pattern descriptor. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 843-854.	1.7	3

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91	Cost Effective Quality Assessment in Industrial Parts Manufacturing via Optical Acquisition. Procedia Manufacturing, 2017, 11, 1207-1214.	1.9	3
92	Formal Verification of Medical CPS. ACM Transactions on Cyber-Physical Systems, 2018, 2, 1-29.	1.9	3
93	Automatic process modeling with time delay neural network based on low-level data.. Procedia Manufacturing, 2019, 38, 125-132.	1.9	3
94	IVUS-Based Local Vessel Estimation for Robotic Intravascular Navigation. IEEE Robotics and Automation Letters, 2021, 6, 8102-8109.	3.3	3
95	PROST-Net: A Deep Learning Approach to Support Real-Time Fusion in Prostate Biopsy. IEEE Transactions on Medical Robotics and Bionics, 2022, 4, 323-326.	2.1	3
96	A Workcell for the Development of Robot-Assisted Surgical Procedures. Journal of Intelligent and Robotic Systems: Theory and Applications, 2000, 28, 301-324.	2.0	2
97	A Software Framework for Process Control in the Agroindustrial Sector. , 2007, , .		2
98	Simulation of networked control systems with applications to telerobotics. , 2009, , .		2
99	Data Stream Stabilization for Optical Coherence Tomography Volumetric Scanning. IEEE Transactions on Medical Robotics and Bionics, 2021, , 1-1.	2.1	2
100	Retrospective Study on Phantom for the Application of Medical Image Registration in the Operating Room Scenario. , 2016, , .		2
101	A Focus Control System Based on Varifocal Mirror for CO_2 Fiber-Coupled Laser Surgery. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 878-887.	2.1	2
102	3D Vision Based Robot Assisted Electrical Impedance Scanning for Soft Tissue Conductivity Sensing. IEEE Robotics and Automation Letters, 2022, 7, 4055-4062.	3.3	2
103	A Time-of-Flight Stereoscopic Endoscope for Anatomical 3D Reconstruction. , 2021, , .		2
104	Plant control over QoS-enabled packet networks. , 2011, , .		1
105	How force perception changes in different refresh rate conditions. , 2011, , .		1
106	A compact navigation system for free hand needle placement in percutaneos procedures. , 2012, , .		1
107	Model Predictive Control over Delay-Based Differentiated Services Control Networks. , 2013, , .		1
108	Interactive constrained dynamics for rigid and deformable objects. Computer Animation and Virtual Worlds, 2016, 27, 151-162.	0.7	1

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109	Deformable Surface Registration for Breast Tumors Tracking: A Phantom Study. , 2017, , .		1
110	Design and Fabrication of a Hydraulic Deformable Membrane Mirror for High-Power Laser Focusing. , 2018, , .		1
111	Large-Stroke Varifocal Mirror with Hydraulic Actuation for Endoscopic Laser Surgery. , 2018, , .		1
112	Robot-Assisted Electrical Impedance Scanning system for 2D Electrical Impedance Tomography tissue inspection. , 2021, 2021, 3729-3733.		1
113	Thermal endoscope based on cost-effective LWIR camera cores. HardwareX, 2022, 11, e00300.	1.1	1
114	Autonomy in robotic prostate biopsy through AI-assisted fusion. , 2021, , .		1
115	Formulation of a local model for simulation of hepatic laparoscopic procedures. International Congress Series, 2005, 1281, 762-767.	0.2	0
116	Performance enhancement with remote rendering for GPU based haptic simulation. , 2011, , .		0
117	Special Issue on Surgical Robotics. Applied Bionics and Biomechanics, 2011, 8, 149-150.	0.5	0
118	30 Years of ICAR Conferences [Society News]. IEEE Robotics and Automation Magazine, 2012, 19, 116-118.	2.2	0
119	Passivity-Based Control over Differentiated-Services Packet Networks. , 2013, , .		0
120	RAS Technical Education Program Leads the New Tech Revolution [Education]. IEEE Robotics and Automation Magazine, 2014, 21, 152-152.	2.2	0
121	A New Season [Education]. IEEE Robotics and Automation Magazine, 2015, 22, 118-119.	2.2	0
122	The Achievements of Antal [In Memoriam]. IEEE Robotics and Automation Magazine, 2015, 22, 180-181.	2.2	0
123	Optimal Solution of Kinodynamic Motion Planning for the Cart-Pole System. IFAC-PapersOnLine, 2017, 50, 6308-6313.	0.5	0
124	Guest Editorial Surgical Robotics: Clinical Challenges and Levels of Autonomy. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 105-107.	2.1	0
125	Introducing Series Elastic Links. Biosystems and Biorobotics, 2019, , 465-469.	0.2	0