Paolo Fiorini

List of Publications by Citations

110 papers	2,531 citations	20 h-index	49 g-index
130 ext. papers	3,259 ext. citations	3.3 avg, IF	5.43 L-index

#	Paper	IF	Citations
110	Motion Planning in Dynamic Environments Using Velocity Obstacles. *International Journal of Robotics Research*, **1998**, 17, 760-772	5.7	923
109	A PLS-Based Statistical Approach for Fault Detection and Isolation of Robotic Manipulators. *IEEE Transactions on Industrial Electronics*, **2012**, 59, 3167-3175	8.9	136
108	A Review of Algorithms for Compliant Control of Stiff and Fixed-Compliance Robots. *IEEE/ASME Transactions on Mechatronics*, **2016**, 21, 613-624	5.5	129
107	A Design and Control Environment for Internet-Based Telerobotics. *International Journal of Robotics Research*, **1998**, 17, 433-449	5.7	121
106	. *IEEE Transactions on Robotics*, **2015**, 31, 1073-1088	6.5	95
105	A Short History of Cleaning Robots. *Autonomous Robots*, **2000**, 9, 211-226	3	84
104	The Development of Hopping Capabilities for Small Robots. *Autonomous Robots*, **2003**, 14, 239-254	3	61
103	Current Capabilities and Development Potential in Surgical Robotics. *International Journal of Advanced Robotic Systems*, **2015**, 12, 61	1.4	60
102	FILOSE for Svenning: A Flow Sensing Bioinspired Robot. *IEEE Robotics and Automation Magazine*, **2014**, 21, 51-62	3.4	44
101	A Parallel-Elastic Actuator for a Torque-Controlled Back-Support Exoskeleton. *IEEE Robotics and Automation Letters*, **2018**, 3, 492-499	4.2	43
100	Impedance control of series elastic actuators: Passivity and acceleration-based control. *Mechatronics*, **2017**, 47, 37-48	3	43
99	Human-adaptive control of series elastic actuators. *Robotica*, **2014**, 32, 1301-1316	2.1	40
98	Robust Force Control of Series Elastic Actuators. *Actuators*, **2014**, 3, 182-204	2.4	35
97	Robotic Surgery. *IEEE Robotics and Automation Magazine*, **2011**, 18, 24-32	3.4	27
96	A Rationale for Acceleration Feedback in Force Control of Series Elastic Actuators. *IEEE Transactions on Robotics*, **2018**, 34, 48-61	6.5	26
95	Development of a Cognitive Robotic System for Simple Surgical Tasks. *International Journal of Advanced Robotic Systems*, **2015**, 12, 37	1.4	26
94	A Deformable Smart Skin for Continuous Sensing Based on Electrical Impedance Tomography. *Sensors*, **2016**, 16,	3.8	25

93	Soft Robotic Manipulator for Improving Dexterity in Minimally Invasive Surgery. *Surgical Innovation*, **2018**, 25, 69-76	2	24
92	Switching control approach for stable navigation of mobile robots in unknown environments. *Robotics and Computer-Integrated Manufacturing*, **2011**, 27, 558-568	9.2	21
91	A SystemC/Matlab co-simulation tool for networked control systems. *Simulation Modelling Practice and Theory*, **2012**, 23, 71-86	3.9	20
90	Impedance control of series elastic actuators based on well-defined force dynamics. *Robotics and Autonomous Systems*, **2017**, 96, 81-92	3.5	20
89	Understanding Environment-Adaptive Force Control of Series Elastic Actuators. *IEEE/ASME Transactions on Mechatronics*, **2018**, 23, 413-423	5.5	19
88	Towards automated surgical robotics: A requirements engineering approach **2012**,		19
87	Cleaning and Household Robots: A Technology Survey. *Autonomous Robots*, **2000**, 9, 227-235	3	18
86	Localization and Sensing for Hopping Robots. *Autonomous Robots*, **2005**, 18, 185-200	3	14
85	A Cognitive Robot Control Architecture for Autonomous Execution of Surgical Tasks. *Journal of Medical Robotics Research*, **2016**, 01, 1650008	1.1	13
84	Robust Real-Time Needle Tracking in 2-D Ultrasound Images Using Statistical Filtering. *IEEE Transactions on Control Systems Technology*, **2017**, 25, 966-978	4.8	13
83	Service robotics (the rise and bloom of service robots) [tc spotlight]. *IEEE Robotics and Automation Magazine*, **2013**, 20, 22-24	3.4	13
82	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	3.9	13
81	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	2.8	12
80	Calibration of mass spring models for organ simulations **2007**,		12
79	GPU-based physical cut in interactive haptic simulations. *International Journal of Computer Assisted Radiology and Surgery*, **2011**, 6, 265-72	3.9	11
78	Introducing service robotics to the pharmaceutical industry. *Intelligent Service Robotics*, **2008**, 1, 267-280	2.6	11
77	Improving Rigid 3-D Calibration for Robotic Surgery. *IEEE Transactions on Medical Robotics and Bionics*, **2020**, 2, 569-573	3.1	11
76	Real-time biopsy needle tip estimation in 2D ultrasound images **2013**,		10

75	Position-based modeling of lesion displacement in ultrasound-guided breast biopsy. *International Journal of Computer Assisted Radiology and Surgery*, **2019**, 14, 1329-1339	3.9	9
74	Trajectory planning with task constraints in densely filled environments **2010**,		9
73	Stability analysis of the linear discrete teleoperation systems with stochastic sampling and data dropout. *European Journal of Control*, **2018**, 41, 63-71	2.5	8
72	Dynamic Movement Primitives: Volumetric Obstacle Avoidance **2019**,		8
71	Surgical gesture recognition with time delay neural network based on kinematic data **2019**,		7
70	Formal verification of robotic surgery tasks by reachability analysis. *Microprocessors and Microsystems*, **2015**, 39, 836-842	2.4	7
69	Autonomous task planning and situation awareness in robotic surgery **2020**,		7
68	Physics-Based Deep Neural Network for Real-Time Lesion Tracking in Ultrasound-Guided Breast Biopsy **2020**, 33-45		7
67	Toward autonomous robotic prostate biopsy: a pilot study. *International Journal of Computer Assisted Radiology and Surgery*, **2021**, 16, 1393-1401	3.9	7
66	Needle and Biopsy Robots: a Review. *Current Robotics Reports*, **2021**, 2, 73-84	3.5	7
65	A flexible sensor for soft-bodied robots based on electrical impedance tomography **2018**,		6
64	Parametric formal verification: the robotic paint spraying case study. *IFAC-PapersOnLine*, **2017**, 50, 9248-9253		6
63	Integration of New Features for Telerobotic Surgery into The Mirosurge System. *Applied Bionics and Biomechanics*, **2011**, 8, 253-265	1.6	6
62	FPGA-based Controller for Haptic Devices **2006**,		6
61	Overcoming some drawbacks of Dynamic Movement Primitives. *Robotics and Autonomous Systems*, **2021**, 144, 103844	3.5	6
60	An electrical bioimpedance scanning system for subsurface tissue detection in Robot Assisted Minimally Invasive Surgery. *IEEE Transactions on Biomedical Engineering*, **2021**, PP,	5	6
59	Generalized Shapes and Point Sets Correspondence and Registration. *Journal of Mathematical Imaging and Vision*, **2015**, 52, 218-233	1.6	5
58	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	5

57	A knowledge-based framework for task automation in surgery **2019**,		5
56	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	3.1	5
55	Towards inductive learning of surgical task knowledge: a preliminary case study of the peg transfer task. *Procedia Computer Science*, **2020**, 176, 440-449	1.6	4
54	Statistical methods for estimating the dynamical parameters of manipulators **2009**,		4
53	Robotically assisted electrical bio-impedance measurements for soft tissue characterization: a feasibility study **2019**,		4
52	Data-Driven Intra-Operative Estimation of Anatomical Attachments for Autonomous Tissue Dissection. *IEEE Robotics and Automation Letters*, **2021**, 6, 1856-1863	4.2	4
51	Cutaneous feedback in teleoperated robotic hands **2016**,		4
50	Biomechanical modelling of probe to tissue interaction during ultrasound scanning. *International Journal of Computer Assisted Radiology and Surgery*, **2020**, 15, 1379-1387	3.9	3
49	Double Deep Q-Network for Trajectory Generation of a Commercial 7DOF Redundant Manipulator **2019**,		3
48	A two-layer approach for shared control in semi-autonomous robotic surgery **2015**,		3
47	The role of visual-haptic discrepancy in virtual reality environments **2012**,		3
46	Predictive control of networked control systems over differentiated services lossy networks **2012**,		3
45	Neural Networks for the Segmentation of Teleoperation Tasks. *Presence: Teleoperators and Virtual Environments*, **1993**, 2, 54-65	2.9	3
44	Dynamic Movement Primitives: Volumetric Obstacle Avoidance Using Dynamic Potential Functions. *Journal of Intelligent and Robotic Systems: Theory and Applications*, **2021**, 101, 1	2.9	3
43	A unified representation to interact with simulated deformable objects in virtual environments **2016**,		3
42	Introducing Series Elastic Links for Affordable Torque-Controlled Robots. *IEEE Robotics and Automation Letters*, **2019**, 4, 137-144	4.2	3
41	Approaches for Action Sequence Representation in Robotics: A Review **2018**,		3
40	Application of contract-based verification techniques for hybrid automata to surgical robotic systems **2014**,		2

39	Cost Effective Quality Assessment in Industrial Parts Manufacturing via Optical Acquisition. *Procedia Manufacturing*, **2017**, 11, 1207-1214	1.5	2
38	Rigid 3D Registration of Pre-operative Information for Semi-Autonomous Surgery **2020**,		2
37	Actuation Selection for Assistive Exoskeletons: Matching Capabilities to Task Requirements. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, **2020**, 28, 2053-2062	4.8	2
36	Inductive learning of answer set programs for autonomous surgical task planning. *Machine Learning* , **2021**, 110, 1739-1763	4	2
35	An Auto-Focusing System for Endoscopic Laser Surgery based on a Hydraulic MEMS Varifocal Mirror **2019**,		2
34	Automatic process modeling with time delay neural network based on low-level data.. *Procedia Manufacturing*, **2019**, 38, 125-132	1.5	2
33	Intra-operative Update of Boundary Conditions for Patient-Specific Surgical Simulation. *Lecture Notes in Computer Science*, **2021**, 373-382	0.9	2
32	Interactive constrained dynamics for rigid and deformable objects. *Computer Animation and Virtual Worlds*, **2016**, 27, 151-162	0.9	1
31	Formal Verification of Medical CPS. *ACM Transactions on Cyber-Physical Systems*, **2018**, 2, 1-29	2.3	1
30	Model predictive control over delay-based differentiated services control networks **2013**,		1
29	Deformable Surface Registration for Breast Tumors Tracking: A Phantom Study **2017**,		1
28	BIPCO: ultrasound feature points based on phase congruency detector and binary pattern descriptor. *International Journal of Computer Assisted Radiology and Surgery*, **2015**, 10, 843-54	3.9	1
27	A Workcell for the Development of Robot-Assisted Surgical Procedures. *Journal of Intelligent and Robotic Systems: Theory and Applications*, **2000**, 28, 301-324	2.9	1
26	Industry 4.0 and prospects of circular economy: a survey of robotic assembly and disassembly. *International Journal of Advanced Manufacturing Technology*,1	3.2	1
25	A Focus Control System Based on Varifocal Mirror for CO2 Fiber-Coupled Laser Surgery. *IEEE Transactions on Medical Robotics and Bionics*, **2021**, 1-1	3.1	1
24	Causal interaction modeling on ultra-processed food manufacturing **2020**,		1
23	Large-Stroke Varifocal Mirror with Hydraulic Actuation for Endoscopic Laser Surgery **2018**,		1
22	Unsupervised Identification of Surgical Robotic Actions From Small Non-Homogeneous Datasets. *IEEE Robotics and Automation Letters*, **2021**, 6, 8205-8212	4.2	1

21	Industrial Time Series Modeling With Causal Precursors and Separable Temporal Convolutions. *IEEE Robotics and Automation Letters*, **2021**, 6, 6939-6946	4.2	1
20	Modelling of Surgical Procedures using Statecharts for Semi-Autonomous Robotic Surgery. *IEEE Transactions on Medical Robotics and Bionics*, **2021**, 1-1	3.1	1
19	Pre-Clinical Validation of a Semi-Autonomous Robot for Transperineal Prostate Biopsy. *IEEE Transactions on Medical Robotics and Bionics*, **2022**, 1-1	3.1	1
18	A Time-of-Flight Stereoscopic Endoscope for Anatomical 3D Reconstruction **2021**,		1
17	Autonomy in robotic prostate biopsy through AI-assisted fusion **2021**,		1
16	3D Vision Based Robot Assisted Electrical Impedance Scanning for Soft Tissue Conductivity Sensing. *IEEE Robotics and Automation Letters*, **2022**, 1-1	4.2	0
15	Automatic detection of procedural knowledge in robotic-assisted surgical texts. *International Journal of Computer Assisted Radiology and Surgery*, **2021**, 16, 1287-1295	3.9	0
14	. *IEEE Robotics and Automation Letters*, **2021**, 6, 8102-8109	4.2	0
13	Optimal Solution of Kinodynamic Motion Planning for the Cart-Pole System. *IFAC-PapersOnLine*, **2017**, 50, 6308-6313	0.7	
12	Guest Editorial Surgical Robotics: Clinical Challenges and Levels of Autonomy. *IEEE Transactions on Medical Robotics and Bionics*, **2020**, 2, 105-107	3.1	
11	The Achievements of Antal [In Memoriam]. *IEEE Robotics and Automation Magazine*, **2015**, 22, 180-181	3.4	
10	Special Issue on Surgical Robotics. *Applied Bionics and Biomechanics*, **2011**, 8, 149-150	1.6	
9	Formulation of a local model for simulation of hepatic laparoscopic procedures. *International Congress Series*, **2005**, 1281, 762-767		
8	Robot-Assisted Electrical Impedance Scanning system for 2D Electrical Impedance Tomography tissue inspection. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2021**,	0.9	
7	PROST-Net: A deep learning approach to support real-time fusion in prostate biopsy. *IEEE Transactions on Medical Robotics and Bionics*, **2022**, 1-1	3.1	
6	Distortion and instability compensation with deep learning for rotational scanning endoscopic optical coherence tomography.. *Medical Image Analysis*, **2022**, 77, 102355	15.4	
5	Introducing Series Elastic Links. *Biosystems and Biorobotics*, **2019**, 465-469	0.2	
4	A SystemC/MATLAB Co-simulation Tool for Networked Control Systems. *Lecture Notes in Control and Information Sciences*, **2015**, 283-290	0.5	

3	Data Stream Stabilization for Optical Coherence Tomography Volumetric Scanning. *IEEE Transactions on Medical Robotics and Bionics*, **2021**, 1-1	3.1
2	Thermal endoscope based on cost-effective LWIR camera cores.. *HardwareX*, **2022**, 11, e00300	2.7
1	Robot assisted electrical impedance scanning for tissue bioimpedance spectroscopy measurement. *Measurement: Journal of the International Measurement Confederation*, **2022**, 111112	4.6