Leonardo S Mattos

List of Publications by Year
in descending order

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130 papers	1,914 citations	331670 21 h-index	345221 36 g-index
133 all docs	133 docs citations	133 times ranked	1900 citing authors

#	Article	IF	Citations
1	Blood vessel segmentation algorithms â€" Review of methods, datasets and evaluation metrics. Computer Methods and Programs in Biomedicine, 2018, 158, 71-91.	4.7	369
2	A novel computerized surgeonâ€"machine interface for robotâ€assisted laser phonomicrosurgery. Laryngoscope, 2014, 124, 1887-1894.	2.0	58
3	Toward Emotion Recognition From Physiological Signals in the Wild: Approaching the Methodological Issues in Real-Life Data Collection. Frontiers in Psychology, 2020, 11, 1111.	2.1	57
4	Deep Learning Applied to White Light and Narrow Band Imaging Videolaryngoscopy: Toward Realâ€Time Laryngeal Cancer Detection. Laryngoscope, 2022, 132, 1798-1806.	2.0	52
5	Confident texture-based laryngeal tissue classification for early stage diagnosis support. Journal of Medical Imaging, 2017, 4, 1.	1.5	51
6	A Fully Automated System for Adherent Cells Microinjection. IEEE Journal of Biomedical and Health Informatics, 2014, 18, 83-93.	6.3	45
7	Blastocyst Microinjection Automation. IEEE Transactions on Information Technology in Biomedicine, 2009, 13, 822-831.	3.2	42
8	Learning-based classification of informative laryngoscopic frames. Computer Methods and Programs in Biomedicine, 2018, 158, 21-30.	4.7	39
9	Uncertainty-Aware Organ Classification for Surgical Data Science Applications in Laparoscopy. IEEE Transactions on Biomedical Engineering, 2018, 65, 2649-2659.	4.2	37
10	Deep Learning for Automatic Segmentation of Oral and Oropharyngeal Cancer Using Narrow Band Imaging: Preliminary Experience in a Clinical Perspective. Frontiers in Oncology, 2021, 11, 626602.	2.8	37
11	Laryngeal Tumor Detection and Classification in Endoscopic Video. IEEE Journal of Biomedical and Health Informatics, 2016, 20, 322-332.	6.3	34
12	Dense soft tissue 3D reconstruction refined with super-pixel segmentation for robotic abdominal surgery. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 197-206.	2.8	31
13	Computer-assisted liver graft steatosis assessment via learning-based texture analysis. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 1357-1367.	2.8	29
14	Toward Improving Safety in Neurosurgery with an Active Handheld Instrument. Annals of Biomedical Engineering, 2018, 46, 1450-1464.	2.5	29
15	Design and Control of a Magnetic Laser Scanner for Endoscopic Microsurgeries. IEEE/ASME Transactions on Mechatronics, 2019, 24, 527-537.	5.8	29
16	5G Robotic Telesurgery: Remote Transoral Laser Microsurgeries on a Cadaver. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 511-518.	3.2	28
17	Transfer learning for informative-frame selection in laryngoscopic videos through learned features. Medical and Biological Engineering and Computing, 2020, 58, 1225-1238.	2.8	27
18	New Developments Towards Automated Blastocyst Microinjections. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	25

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19	A New Venous Entry Detection Method Based on Electrical Bio-impedance Sensing. Annals of Biomedical Engineering, 2018, 46, 1558-1567.	2.5	24
20	Operating From a Distance: Robotic Vocal Cord 5G Telesurgery on a Cadaver. Annals of Internal Medicine, 2020, 173, 940-941.	3.9	24
21	SmartProbe: a bioimpedance sensing system for head and neck cancer tissue detection. Physiological Measurement, 2020, 41, 054003.	2.1	24
22	A virtual scalpel system for computer-assisted laser microsurgery. , 2011, , .		23
23	EMG-driven control in lower limb prostheses: a topic-based systematic review. Journal of NeuroEngineering and Rehabilitation, 2022, 19, 43.	4.6	23
24	A hand-held robotic device for peripheral intravenous catheterization. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2017, 231, 1165-1177.	1.8	20
25	EndoAbS dataset: Endoscopic abdominal stereo image dataset for benchmarking 3D stereo reconstruction algorithms. International Journal of Medical Robotics and Computer Assisted Surgery, 2018, 14, e1926.	2.3	20
26	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.	3.2	20
27	Inter-foetus Membrane Segmentation for TTTS Using Adversarial Networks. Annals of Biomedical Engineering, 2020, 48, 848-859.	2.5	20
28	A fast and precise micropipette positioning system based on continuous camera-robot recalibration and visual servoing. , 2009, , .		19
29	Appraisal theory-based mobile app for physiological data collection and labelling in the wild. , 2019, , .		19
30	Towards a Virtual Reality Interface for Remote Robotic Teleoperation. , 2019, , .		19
31	Microsurgery robots: addressing the needs of high-precision surgical interventions. Swiss Medical Weekly, 2016, 146, w14375.	1.6	19
32	Semi-automated blastocyst microinjection. , 0, , .		18
33	Next-generation micromanipulator for computer-assisted laser phonomicrosurgery. , 2011, 2011, 4555-9.		17
34	Videomics of the Upper Aero-Digestive Tract Cancer: Deep Learning Applied to White Light and Narrow Band Imaging for Automatic Segmentation of Endoscopic Images. Frontiers in Oncology, 0, 12, .	2.8	17
35	Enhanced computer-assisted laser microsurgeries with a “virtual microscope” based surgical system. , 2014, , .		16
36	Towards a Magnetically-Actuated Laser Scanner for Endoscopic Microsurgeries. Journal of Medical Robotics Research, 2018, 03, 1840004.	1.2	16

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37	Î¼RALP and Beyond: Micro-Technologies and Systems for Robot-Assisted Endoscopic Laser Microsurgery. Frontiers in Robotics and AI, 2021, 8, 664655.	3.2	16
38	Brain-Controlled AR Feedback Design for User's Training in Surgical HRI. , 2015, , .		15
39	A vision-based system for fast and accurate laser scanning in robot-assisted phonomicrosurgery. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 217-229.	2.8	15
40	Haptic Feedback for Control and Active Constraints in Contactless Laser Surgery: Concept, Implementation, and Evaluation. IEEE Transactions on Haptics, 2018, 11, 241-254.	2.7	15
41	Long Term Safety Area Tracking (LT-SAT) with online failure detection and recovery for robotic minimally invasive surgery. Medical Image Analysis, 2018, 45, 13-23.	11.6	15
42	Microscale Precision Control of a Computer-Assisted Transoral Laser Microsurgery System. IEEE/ASME Transactions on Mechatronics, 2020, 25, 604-615.	5.8	15
43	Transoral laser microsurgery: feasibility of a new exoscopic HD-3D system coupled with free beam or fiber laser. Lasers in Medical Science, 2021, 36, 1865-1872.	2.1	15
44	Online estimation of laser incision depth for transoral microsurgery: approach and preliminary evaluation. International Journal of Medical Robotics and Computer Assisted Surgery, 2016, 12, 53-61.	2.3	14
45	EnViSoRS: Enhanced Vision System for Robotic Surgery. A User-Defined Safety Volume Tracking to Minimize the Risk of Intraoperative Bleeding. Frontiers in Robotics and AI, 2017, 4, .	3.2	13
46	Hybrid Machine Learning-Neuromusculoskeletal Modeling for Control of Lower Limb Prosthetics. , 2020, , .		13
47	Imaging based metrics for performance assessment in laser phonomicrosurgery. , 2013, , .		12
48	Kinesthetic and vibrotactile haptic feedback improves the performance of laser microsurgery. , 2016, , .		12
49	Design and Study of a Next-Generation Computer-Assisted System for Transoral Laser Microsurgery. OTO Open, 2018, 2, 2473974X1877332.	1.4	12
50	A Hand-Held Robot for Precise and Safe PIVC. IEEE Robotics and Automation Letters, 2019, 4, 655-661.	5.1	12
51	Speeding Up Video Processing for Blastocyst Microinjection. , 2006, , .		11
52	Comparative usability and performance evaluation of surgeon interfaces in laser phonomicrosurgery. , 2013, , .		11
53	Laser Incision Depth Control in Robot-Assisted Soft Tissue Microsurgery. Journal of Medical Robotics Research, 2017, 02, 1740006.	1.2	11
54	Effects of galvanic skin response feedback on user experience in gaze-controlled gaming: A pilot study. , 2017, 2017, 2458-2461.		11

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55	Human in the Loop of Robot Learning: EEG-Based Reward Signal for Target Identification and Reaching Task. , 2018, , .		11
56	Design and control of a robotic system for assistive laser phonomicrosurgery. , 2010, 2010, 5411-5.		10
57	Magnetic laser scanner for endoscopic microsurgery. , 2017, , .		10
58	New software tools for enhanced precision in robot-assisted laser phonomicrosurgery. , 2012, 2012, 2804-7.		9
59	Learning Temperature Dynamics on Agar-Based Phantom Tissue Surface During Single Point CO $$_2$$ 2 Laser Exposure. Neural Processing Letters, 2015, 42, 55-70.	3.2	9
60	Does tactile feedback enhance single-trial detection of error-related eeg potentials?. , 2017, , .		9
61	A novel framework for automated targeting of unstained living cells in bright field microscopy. , 2011, , .		8
62	Feed forward incision control for laser microsurgery of soft tissue. , 2015, , .		8
63	Automatic workflow for narrow-band laryngeal video stitching. , 2016, 2016, 1188-1191.		8
64	Design and Modeling of a Three-Degree-of-Freedom Articulating Robotic Microsurgical Forceps for Trans-Oral Laser Microsurgery. Journal of Medical Devices, Transactions of the ASME, 2019, 13, .	0.7	8
65	Vision-Guided Autonomous Robotic Electrical Bio-Impedance Scanning System for Abnormal Tissue Detection. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 866-877.	3.2	8
66	Mutual information-based feature selection for low-cost BCIs based on motor imagery. , 2016, 2016, 2772-2775.		7
67	Soft brain-machine interfaces for assistive robotics: A novel control approach. , 2017, 2017, 863-869.		7
68	Non-Contact Tissue Ablations with High-Speed Laser Scanning in Endoscopic Laser Microsurgery. , 2018, 2018, 3660-3663.		7
69	A robotic microsurgical forceps for transoral laser microsurgery. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 321-333.	2.8	7
70	Modeling Tissue Temperature Dynamics during Laser Exposure. Lecture Notes in Computer Science, 2013, , 96-106.	1.3	7
71	A visual targeting system for the microinjection of unstained adherent cells. Computers in Biology and Medicine, 2013, 43, 109-120.	7.0	6
72	BCI-based user training in surgical robotics. , 2015, 2015, 4918-21.		6

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73	Robot-assisted microsurgical forceps with haptic feedback for transoral laser microsurgery. , 2016, 2016, 5156-5159.		6
74	A venipuncture detection system for robot-assisted intravenous catheterization. , 2016, , .		6
75	Focus-sensitive dwell time in EyeBCI: Pilot study. , 2016, , .		6
76	FCNN-based axon segmentation for convection-enhanced delivery optimization. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 493-499.	2.8	6
77	The <scp>GPS</scp> for surgery: A userâ€centered evaluation of a navigation system for laparoscopic surgery. International Journal of Medical Robotics and Computer Assisted Surgery, 2020, 16, 1-13.	2.3	6
78	Design and Integration of Electrical Bio-Impedance Sensing in a Bipolar Forceps for Soft Tissue Identification: A Feasibility Study. IFMBE Proceedings, 2020, , 3-10.	0.3	6
79	Interface Design for MicroBiomanipulation and Teleoperation. , 2009, , .		5
80	Comparative evaluation of user interfaces for robot-assisted laser phonomicrosurgery. , 2011, 2011, 7376-9.		5
81	Safe teleoperation based on flexible intraoperative planning for robot-assisted laser microsurgery. , 2012, 2012, 174-8.		5
82	New motorized micromanipulator for robot-assisted laser phonomicrosurgery. , 2015, , .		5
83	Robotically assisted electrical bio-impedance measurements for soft tissue characterization: a feasibility study. , 2019, , .		5
84	Developing portable acoustic arrays on a largeâ€scale eâ€textile substrate. International Journal of Clothing Science and Technology, 2004, 16, 73-83.	1.1	4
85	From teleoperated to automatic blastocyst microinjections: Designing a new system from expert-controlled operations. , 2008, , .		4
86	Anisotropic Contour Completion for Cell Microinjection Targeting. , 2010, , .		4
87	Diffusion tensor driven contour closing for cell microinjection targeting. , 2010, 2010, 4072-5.		4
88	Smart devices in robot-assisted laser microsurgery: Towards ubiquitous tele-cooperation. , 2012, , .		4
89	Design and control of a novel robotic microsurgical forceps for Transoral Laser Microsurgery. , 2017, , .		4
90	Effect of a Click-Like Feedback on Motor Imagery in EEG-BCI and Eye-Tracking Hybrid Control for Telepresence. , 2018, , .		4

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91	An Auto-Focusing System for Endoscopic Laser Surgery based on a Hydraulic MEMS Varifocal Mirror. , 2019, , .		4
92	NephCNN: A deep-learning framework for vessel segmentation in nephrectomy laparoscopic videos. , 2021, , .		4
93	Real-time vessel segmentation and reconstruction for virtual fixtures for an active handheld microneurosurgical instrument. International Journal of Computer Assisted Radiology and Surgery, 2022, 17, 1069-1077.	2.8	4
94	Efficacy of High-Resolution Preoperative 3D Reconstructions for Lesion Localization in Oncological Colorectal Surgeryâ€"First Pilot Study. Healthcare (Switzerland), 2022, 10, 900.	2.0	4
95	Experiments with a teleoperated system for improved bio-micromanipulations. , 2010, , .		3
96	Supervisory system for robot assisted laser phonomicrosurgery. , 2013, 2013, 4839-42.		3
97	Thermal supervision during robotic laser microsurgery. , 2014, , .		3
98	A bioimpedance sensing system for in-vivo cancer tissue identification: Design and preliminary evaluation. , 2017, 2017, 4235-4238.		3
99	Formal Verification of Medical CPS. ACM Transactions on Cyber-Physical Systems, 2018, 2, 1-29.	2.5	3
100	The CALM System: New Generation Computer-Assisted Laser Microsurgery. , 2019, , .		3
101	Closed-Loop Control of a Magnetically Actuated Fiber-Coupled Laser for Computer-Assisted Laser Microsurgery. , 2019, , .		3
102	Enhanced Vision to Improve Safety in Robotic Surgery. , 2020, , 223-237.		3
103	Transference of Evolved Unmanned Aerial Vehicle Controllers to a Wheeled Mobile Robot. , 0, , .		2
104	A Mixed-Reality Training System for Teleoperated Biomanipulations. , 2010, , .		2
105	Comparison of tablet-based strategies for incision planning in laser microsurgery. , 2015, , .		2
106	Safe electrode trajectory planning in SEEG via MIP-based vessel segmentation. , 2017, , .		2
107	A Handheld Robot for Pediatric PIVC: Device Design and Preclinical Trial. Journal of Medical Robotics Research, 2018, 03, 1840003.	1.2	2
108	SDOP: A smart handheld device for over puncture prevention during pediatric peripheral intravenous catheterization. , 2018, , .		2

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109	Gaze-controlled Laser Pointer Platform for People with Severe Motor Impairments: Preliminary Test in Telepresence. , 2018, 2018, 1813-1816.		2
110	Hybrid Visual Servoing for Autonomous Robotic Laser Tattoo Removal. , 2019, , .		2
111	A Focus Control System Based on Varifocal Mirror for CO₂ Fiber-Coupled Laser Surgery. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 878-887.	3.2	2
112	Modelling needle forces during insertion into soft tissue. , 2015, 2015, 4840-4.		1
113	Design and Fabrication of a Hydraulic Deformable Membrane Mirror for High-Power Laser Focusing. , 2018, , .		1
114	Large-Stroke Varifocal Mirror with Hydraulic Actuation for Endoscopic Laser Surgery. , 2018, , .		1
115	Design and Evaluation of an Open-source Gaze-controlled GUI for Web-browsing. , 2019, , .		1
116	Capillary Pressure Control System for Teleoperated and Automatic Biomanipulations. IFMBE Proceedings, 2013, , 902-905.	0.3	1
117	A virtual scalpel system for computer-assisted laser microsurgery. , 2011, , .		1
118	Editorial: Novel Actuators, Sensors and Control Systems for Endoscopic Robots. Frontiers in Robotics and AI, 2021, 8, 797467.	3.2	1
119	Workshop on robotic microsurgery and image-guided surgical interventions. , 2014, , .		0
120	Novel modular 2-DOF microsurgical forceps for transoral laser microsurgeries: Ergonomic design and preliminary evaluation. , 2016, 2016, 5216-5219.		0
121	Robot-Assisted System for Free-Beam Transoral Laser Microsurgery. IFMBE Proceedings, 2016, , 720-725.	0.3	0
122	Design and modeling of novel modular 2 DOF microsurgical forceps for transoral laser microsurgeries. , 2016, , .		0
123	Assessing the Role of Teleoperated Robotic Systems in Biomanipulations - A Case Study on Blastocyst Microinjection. , 2018, 2018, 1857-1860.		0
124	Towards Sound-source Position Estimation using Mutual Information for Next Best View Motion Planning. , 2019, , .		0
125	ICAR 2019 Special Issue. Journal of Intelligent and Robotic Systems: Theory and Applications, 2021, 102, 1.	3.4	0
126	Microsurgery Systems. , 2015, , 61-89.		0

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127	A hand-held robot for safe and automatic PIVC. , 0, , .		0
128	Affective Communication Enhancement System for Locked-In Syndrome Patients. Lecture Notes in Computer Science, 2020, , 143-156.	1.3	0
129	Designing and Testing a Closed-loop Magnetically Actuated Laser Scanning System for Tissue Ablation. Journal of Medical Devices, Transactions of the ASME, 2021, , .	0.7	0
130	Towards a Compact Vision-based Auto-Focusing System for Endoscopic Laser Surgery. , 2021, , .		0