Emmanuel B Vander Poorten

List of Publications by Year
in descending order

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109	1,620	394421	454955
papers	citations	19 h-index	30 g-index

116	116	116	1391
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Surgical robotics beyond enhanced dexterity instrumentation: a survey of machine learning techniques and their role in intelligent and autonomous surgical actions. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 553-568.	2.8	165
2	ToolNet: Holistically-nested real-time segmentation of robotic surgical tools. , 2017, , .		84
3	In-Human Robot-Assisted Retinal Vein Cannulation, A World First. Annals of Biomedical Engineering, 2018, 46, 1676-1685.	2.5	77
4	Design and realisation of a novel robotic manipulator for retinal surgery. , 2013, , .		51
5	Real-Time Segmentation of Non-rigid Surgical Tools Based on Deep Learning and Tracking. Lecture Notes in Computer Science, 2017, , 84-95.	1.3	51
6	Robotâ€assisted retinal vein cannulation in an inÂvivo porcine retinal vein occlusion model. Acta Ophthalmologica, 2017, 95, 270-275.	1.1	44
7	A Continuum Robot and Control Interface for Surgical Assist in Fetoscopic Interventions. IEEE Robotics and Automation Letters, 2017, 2, 1656-1663.	5.1	43
8	Improved FBG-Based Shape Sensing Methods for Vascular Catheterization Treatment. IEEE Robotics and Automation Letters, 2020, , 1-1.	5.1	36
9	Modeling and compensation of asymmetric rate-dependent hysteresis of a miniature pneumatic artificial muscle-based catheter. Mechanical Systems and Signal Processing, 2021, 154, 107532.	8.0	31
10	Hysteresis Modeling of Robotic Catheters Based on Long Short-Term Memory Network for Improved Environment Reconstruction. IEEE Robotics and Automation Letters, 2021, 6, 2106-2113.	5.1	30
11	Robust Catheter and Guidewire Tracking Using B-Spline Tube Model and Pixel-Wise Posteriors. IEEE Robotics and Automation Letters, 2016, 1, 303-308.	5.1	29
12	Automatic Tool Landmark Detection for Stereo Vision in Robot-Assisted Retinal Surgery. IEEE Robotics and Automation Letters, 2018, 3, 612-619.	5.1	29
13	Bilateral Teleoperation: Quantifying the Requirements for and Restrictions of Ideal Transparency. IEEE Transactions on Control Systems Technology, 2014, 22, 387-395.	5.2	26
14	Experimental Validation of a Robotic Comanipulation and Telemanipulation System for Retinal Surgery. , 2014, , .		25
15	A mechatronic analysis of the classical position-force controller based on bounded environment passivity. International Journal of Robotics Research, 2011, 30, 444-462.	8.5	24
16	Design of a teleoperated robotic system for retinal surgery. , 2014, , .		24
17	A mixed-reality surgical trainer with comprehensive sensing for fetal laser minimally invasive surgery. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 1949-1957.	2.8	24
18	Robotic Retinal Surgery. , 2020, , 627-672.		24

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19	EDM texturing of multicrystalline silicon wafer and EFG ribbon for solar cell application. International Journal of Machine Tools and Manufacture, 2002, 42, 1657-1664.	13.4	23
20	Robust Catheter Tracking by Fusing Electromagnetic Tracking, Fiber Bragg Grating and Sparse Fluoroscopic Images. IEEE Sensors Journal, 2021, 21, 23422-23434.	4.7	23
21	Combined OCT distance and FBG force sensing cannulation needle for retinal vein cannulation: in vivo animal validation. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 301-309.	2.8	22
22	Bounded environment passivity of the classical Position-Force teleoperation controller. , 2009, , .		21
23	Development and experimental validation of a force sensing needle for robotically assisted retinal vein cannulations. , 2015, , .		21
24	Force from Shapeâ€"Estimating the Location and Magnitude of the External Force on Flexible Instruments. IEEE Transactions on Robotics, 2021, 37, 1826-1833.	10.3	21
25	Robust variable-scale bilateral control for micro teleoperation. , 2008, , .		20
26	Leveraging the Fulcrum Point in Robotic Minimally Invasive Surgery. IEEE Robotics and Automation Letters, 2018, 3, 2071-2078.	5.1	20
27	Evaluation of Haptic Feedback on Bimanually Teleoperated Laparoscopy for Endometriosis Surgery. IEEE Transactions on Biomedical Engineering, 2019, 66, 1207-1221.	4.2	20
28	Deep learning-based fetoscopic mosaicking for field-of-view expansion. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1807-1816.	2.8	20
29	Catheter navigation based on probabilistic fusion of electromagnetic tracking and physically-based simulation. , 2012, , .		19
30	Deep Placental Vessel Segmentation for Fetoscopic Mosaicking. Lecture Notes in Computer Science, 2020, , 763-773.	1.3	18
31	Fluidic actuation for intra-operative in situ imaging. , 2015, , .		17
32	Deep learning-based monocular placental pose estimation: towards collaborative robotics in fetoscopy. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1561-1571.	2.8	17
33	Robotic Endoscope Control Via Autonomous Instrument Tracking. Frontiers in Robotics and AI, 2022, 9, 832208.	3.2	17
34	Towards a clinically applicable robotic assistance system for retinal vein cannulation. , 2016, , .		16
35	3D Catheter Shape Reconstruction Using Electromagnetic and Image Sensors. Journal of Medical Robotics Research, 2017, 02, 1740009.	1.2	16
36	From a Disposable Ureteroscope to an Active Lightweight Fetoscopeâ€"Characterization and Usability Evaluation. IEEE Robotics and Automation Letters, 2018, 3, 4359-4366.	5.1	16

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37	A new hybrid MCDM approach for RPN evaluation for a medical device prototype. Quality and Reliability Engineering International, 2021, 37, 2189-2213.	2.3	16
38	Development and Experimental Validation of a Combined FBG Force and OCT Distance Sensing Needle for Robot-Assisted Retinal Vein Cannulation. , 2018, , .		15
39	Design and evaluation of a new bioelectrical impedance sensor for micro-surgery: application to retinal vein cannulation. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 311-320.	2.8	15
40	Fusion of Biplane Fluoroscopy With Fiber Bragg Grating for 3D Catheter Shape Reconstruction. IEEE Robotics and Automation Letters, 2021, 6, 6505-6512.	5.1	15
41	Deep-Learning-Based Compliant Motion Control of a Pneumatically-Driven Robotic Catheter. IEEE Robotics and Automation Letters, 2022, 7, 8853-8860.	5.1	15
42	Probabilistic approach to recognize local navigation plans by fusing past driving information with a personalized user model. , 2013, , .		14
43	Estimation of optimal pivot point for remote center of motion alignment in surgery. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 205-215.	2.8	14
44	Haptic Guidance Based on All-Optical Ultrasound Distance Sensing for Safer Minimally Invasive Fetal Surgery. Journal of Medical Robotics Research, 2018, 03, 1841001.	1.2	14
45	Estimating and Localizing External Forces Applied on Flexible Instruments by Shape Sensing. , 2019, , .		13
46	FBG-Based Estimation of External Forces Along Flexible Instrument Bodies. Frontiers in Robotics and AI, 2021, 8, 718033.	3.2	13
47	Powered wheelchair navigation assistance through kinematically correct environmental haptic feedback. , 2012, , .		12
48	Constraint-Based Interaction Control of Robots Featuring Large Compliance and Deformation. IEEE Transactions on Robotics, 2015, 31, 1252-1260.	10.3	12
49	FetNet: a recurrent convolutional network for occlusion identification in fetoscopic videos. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 791-801.	2.8	12
50	Synthesis and methodology for optimal design of a parallel remote center of motion mechanism: Application to robotic eye surgery. Mechanism and Machine Theory, 2020, 151, 103896.	4.5	11
51	Integrated Capacitance Sensing for Miniature Artificial Muscle Actuators. IEEE Sensors Journal, 2020, 20, 1363-1372.	4.7	10
52	A large displacement model for superelastic material side-notched tube instruments. International Journal of Mechanical Sciences, 2021, 197, 106329.	6.7	10
53	Deep Sequential Mosaicking of Fetoscopic Videos. Lecture Notes in Computer Science, 2019, , 311-319.	1.3	10
54	Contact Localization of Continuum and Flexible Robot Using Data-Driven Approach. IEEE Robotics and Automation Letters, 2022, 7, 6910-6917.	5.1	10

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55	Stability analysis and robust control for fixed-scale teleoperation. Advanced Robotics, 2006, 20, 681-706.	1.8	9
56	A Survey on the Current Status and Future Challenges Towards Objective Skills Assessment in Endovascular Surgery. Journal of Medical Robotics Research, 2016, 01, 1640010.	1.2	9
57	Validation of a high-fidelity training model for fetoscopic spina bifida surgery. Scientific Reports, 2021, 11, 6109.	3.3	9
58	A miniature robotic steerable endoscope for maxillary sinus surgery called PliENT. Scientific Reports, 2022, 12, 2299.	3.3	9
59	Rendering a Rigid Virtual World through an Impulsive Haptic Interface. , 2006, , .		8
60	Handheld Active Add-On Control Unit for a Cable-Driven Flexible Endoscope. Frontiers in Robotics and AI, 2019, 6, 87.	3.2	8
61	Setup and Method for Remote Center of Motion Positioning Guidance During Robot-Assisted Surgery. , 2019, , .		8
62	Intuitive Control Strategies for Teleoperation of Active Catheters in Endovascular Surgery. Journal of Medical Robotics Research, 2016, 01, 1640012.	1.2	7
63	Control of a hybrid robotic system for computer-assisted interventions in dynamic environments. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 1371-1383.	2.8	7
64	Single Scan OCT-Based Retina Detection for Robot-Assisted Retinal Vein Cannulation. Journal of Medical Robotics Research, 2018, 03, 1840005.	1.2	7
65	Macro-Micro Multi-Arm Robot for Single-Port Access Surgery. , 2019, , .		7
66	Active Handheld Flexible Fetoscopeâ€“Design and Control Based on a Modified Generalized Prandtl-Ishlinski Model. , 2020, , .		7
67	A Framework for Fast Automatic Robot Ultrasound Calibration. , 2021, , .		7
68	Compliance computation for continuum types of robots. , 2014, , .		6
69	Intuitive teleoperation of active catheters for endovascular surgery. , 2015, , .		6
70	Robotic Control of a Multi-Modal Rigid Endoscope Combining Optical Imaging with All-Optical Ultrasound. , 2019, , .		6
71	Transparency Trade-Offs for a 3-Channel Controller Revealed by the Bounded Environment Passivity Method. , 2010, , .		5
72	On the use of shunt impedances versus bounded environment passivity for teleoperation systems. , 2011, , .		5

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73	Design and Shared Control of a Flexible Endoscope with Autonomous Distal Tip Alignment. , 2019, , .		5
74	Towards Palpation in Virtual Reality by an Encountered-Type Haptic Screen. Lecture Notes in Computer Science, 2014, , 257-265.	1.3	5
75	Comparative Quantitative Analysis of Robotic Ultrasound Image Calibration Methods. , 2021, , .		5
76	Feeling a rigid virtual world through an impulsive haptic display. Advanced Robotics, 2007, 21, 1411-1440.	1.8	4
77	Cognitive AutonomouS CAtheters Operating in Dynamic Environments. Journal of Medical Robotics Research, 2016, 01, 1640011.	1.2	4
78	An Automatic Registration Method for Radiation-Free Catheter Navigation Guidance. Journal of Medical Robotics Research, 2016, 01, 1640009.	1.2	4
79	Electrical Bio-Impedance Proximity Sensing for Vitreo-Retinal Micro-Surgery. IEEE Robotics and Automation Letters, 2019, 4, 4086-4093.	5.1	4
80	A Hybrid Active/Passive Wrist Approach for Increasing Virtual Fixture Stiffness in Comanipulated Robotic Minimally Invasive Surgery. IEEE Robotics and Automation Letters, 2019, 4, 3029-3036.	5.1	4
81	A Method Based on 3D Shape Analysis Towards the Design of Flexible Instruments for Endoscopic Maxillary Sinus Surgery. Annals of Biomedical Engineering, 2021, 49, 1534-1550.	2.5	4
82	Backwards Maneuvering Powered Wheelchairs with Haptic Guidance. Lecture Notes in Computer Science, 2012, , 419-431.	1.3	3
83	Body wall force sensor for simulated minimally invasive surgery: Application to fetal surgery. , 2017, , .		3
84	Innovative Bio-Impedance Sensor Towards Puncture Detection in Eye Surgery for Retinal Vein Occlusion Treatment. , 2018, , .		3
85	IVUS-Based Local Vessel Estimation for Robotic Intravascular Navigation. IEEE Robotics and Automation Letters, 2021, 6, 8102-8109.	5.1	3
86	Variable-Scale Bilateral Control for Micro Teleoperation. Journal of the Robotics Society of Japan, 2009, 27, 239-248.	0.1	3
87	Local One-Dimensional Motion Estimation Using FBG-Based Shape Sensing for Cardiac Applications. IEEE Robotics and Automation Letters, 2022, 7, 8122-8129.	5.1	3
88	Design and Evaluation of a Telepresence Vision System for Manipulation Tasks. , 2007, , .		2
89	Force control for tissue tensioning in precise robotic laser surgery. , 2015, , .		2
90	Position control of robotic catheters inside the vasculature based on a predictive minimum energy model. , 2016, , .		2

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91	User-specific Gaussian Process Model of Wheelchair Drivers with a Haptic Joystick Interface. , 2018, , .		2
92	Evaluating the Potential Benefit of Autostereoscopy in Laparoscopic Sacrocolpopexy through VR Simulation. , 2019, , .		2
93	Towards Real-time Estimation of a Spherical Eye Model based on a Single Fiber OCT. , 2019, , .		2
94	A Virtual Reality Surgical Training System for Office Hysteroscopy with Haptic Feedback: A Feasibility Study. Lecture Notes in Computer Science, 2020, , 115-127.	1.3	2
95	Impulse-based Control of an Impulsive Haptic Interface. , 2007, , .		1
96	In VivoForce Sensing During Laparoscopic Sacrocolpopexy Vaginal Vault Manipulation. Journal of Medical Robotics Research, 2019, 04, 1950003.	1.2	1
97	Design of a micro-opto-mechanical ultrasound sensor for photoacoustic imaging. , 2020, , .		1
98	A uniaxial force and stiffness model of the vagina during laparoscopic sacrocolpopexy. Clinical Biomechanics, 2021, 81, 105204.	1.2	1
99	A Novel Method for Surface Exploration by 6-DOF Encountered-Type Haptic Display Towards Virtual Palpation. IEEE Transactions on Haptics, 2021, 14, 577-590.	2.7	1
100	Automatic air bubble detection based on bio-impedance for safe drug delivery in retinal veins. , 0, , .		1
101	Preclinical implementation of a steerable, Da Vinci XiÂ® compatible CO 2 â€laser fibre carrier for transoral robotic surgery (TORS): A cadaveric feasibility study. International Journal of Medical Robotics and Computer Assisted Surgery, 2021, , e2342.	2.3	1
102	Active, lifelong sensor synchronization: A Kalman filtering approach. , 2011, , .		0
103	861: Finite element analysis of insufflation after fetoscopic cannulation. American Journal of Obstetrics and Gynecology, 2020, 222, S538.	1.3	0
104	Mechatronic Design Optimization of a Teleoperation System Based on Bounded Environment Passivity. Lecture Notes in Computer Science, 2010, , 161-168.	1.3	0
105	Guest Editorial CRASâ€"Joining Efforts, Progressing Faster. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 853-854.	3.2	0
106	Design and Preliminary Characterisation of a New Soft Steerable Sheath for Cardiovascular Interventions. , 2021, , .		0
107	Quantitative Assessment of Calibration Motion Profiles in Robotic-assisted Ultrasound System. , 2022, , .		0
108	Deep-learning-based Position Control of a Robotic Catheter under Environmental Contact. , 2022, , .		0

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109	Implementation of Robotic Shoulder Complex actuated by Pneumatic Artificial Muscles. , 2022, , .		0