

# Emmanuel B Vander Poorten

## List of Publications by Year in descending order

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Version: 2024-02-01

109  
papers

1,620  
citations

394421

19  
h-index

454955

30  
g-index

116  
all docs

116  
docs citations

116  
times ranked

1391  
citing authors

#	ARTICLE	IF	CITATIONS
1	A miniature robotic steerable endoscope for maxillary sinus surgery called PiENT. Scientific Reports, 2022, 12, 2299.	3.3	9
2	Robotic Endoscope Control Via Autonomous Instrument Tracking. Frontiers in Robotics and AI, 2022, 9, 832208.	3.2	17
3	Contact Localization of Continuum and Flexible Robot Using Data-Driven Approach. IEEE Robotics and Automation Letters, 2022, 7, 6910-6917.	5.1	10
4	Deep-Learning-Based Compliant Motion Control of a Pneumatically-Driven Robotic Catheter. IEEE Robotics and Automation Letters, 2022, 7, 8853-8860.	5.1	15
5	Quantitative Assessment of Calibration Motion Profiles in Robotic-assisted Ultrasound System. , 2022, , .		0
6	Deep-learning-based Position Control of a Robotic Catheter under Environmental Contact. , 2022, , .		0
7	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
8	Implementation of Robotic Shoulder Complex actuated by Pneumatic Artificial Muscles. , 2022, , .		0
9	A uniaxial force and stiffness model of the vagina during laparoscopic sacrocolpopexy. Clinical Biomechanics, 2021, 81, 105204.	1.2	1
10	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
11	Force from Shape—Estimating the Location and Magnitude of the External Force on Flexible Instruments. IEEE Transactions on Robotics, 2021, 37, 1826-1833.	10.3	21
12	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
13	Validation of a high-fidelity training model for fetoscopic spina bifida surgery. Scientific Reports, 2021, 11, 6109.	3.3	9
14	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
15	A large displacement model for superelastic material side-notched tube instruments. International Journal of Mechanical Sciences, 2021, 197, 106329.	6.7	10
16	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
17	FBG-Based Estimation of External Forces Along Flexible Instrument Bodies. Frontiers in Robotics and AI, 2021, 8, 718033.	3.2	13
18	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

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19	IVUS-Based Local Vessel Estimation for Robotic Intravascular Navigation. IEEE Robotics and Automation Letters, 2021, 6, 8102-8109.	5.1	3
20	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
21	Robust Catheter Tracking by Fusing Electromagnetic Tracking, Fiber Bragg Grating and Sparse Fluoroscopic Images. IEEE Sensors Journal, 2021, 21, 23422-23434.	4.7	23
22	Preclinical implementation of a steerable, Da Vinci Xi® compatible CO <sub>2</sub> 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
23	Guest Editorial CRAS®"Joining Efforts, Progressing Faster. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 853-854.	3.2	0
24	A Framework for Fast Automatic Robot Ultrasound Calibration. , 2021, , .		7
25	Comparative Quantitative Analysis of Robotic Ultrasound Image Calibration Methods. , 2021, , .		5
26	Design and Preliminary Characterisation of a New Soft Steerable Sheath for Cardiovascular Interventions. , 2021, , .		0
27	Robotic Retinal Surgery. , 2020, , 627-672.		24
28	Integrated Capacitance Sensing for Miniature Artificial Muscle Actuators. IEEE Sensors Journal, 2020, 20, 1363-1372.	4.7	10
29	Design of a micro-opto-mechanical ultrasound sensor for photoacoustic imaging. , 2020, , .		1
30	Active Handheld Flexible Fetoscope"Design and Control Based on a Modified Generalized Prandtl-Ishlinski Model. , 2020, , .		7
31	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
32	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
33	Improved FBC-Based Shape Sensing Methods for Vascular Catheterization Treatment. IEEE Robotics and Automation Letters, 2020, , 1-1.	5.1	36
34	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
35	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
36	861: Finite element analysis of insufflation after fetoscopic cannulation. American Journal of Obstetrics and Gynecology, 2020, 222, S538.	1.3	0

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37	Deep Placental Vessel Segmentation for Fetoscopic Mosaicking. Lecture Notes in Computer Science, 2020, , 763-773.	1.3	18
38	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
39	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
40	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
41	Electrical Bio-Impedance Proximity Sensing for Vitreo-Retinal Micro-Surgery. IEEE Robotics and Automation Letters, 2019, 4, 4086-4093.	5.1	4
42	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
43	Handheld Active Add-On Control Unit for a Cable-Driven Flexible Endoscope. Frontiers in Robotics and AI, 2019, 6, 87.	3.2	8
44	In VivoForce Sensing During Laparoscopic Sacrocolpopexy Vaginal Vault Manipulation. Journal of Medical Robotics Research, 2019, 04, 1950003.	1.2	1
45	Robotic Control of a Multi-Modal Rigid Endoscope Combining Optical Imaging with All-Optical Ultrasound. , 2019, , .		6
46	Evaluating the Potential Benefit of Autostereoscopy in Laparoscopic Sacrocolpopexy through VR Simulation. , 2019, , .		2
47	Design and Shared Control of a Flexible Endoscope with Autonomous Distal Tip Alignment. , 2019, , .		5
48	Macro-Micro Multi-Arm Robot for Single-Port Access Surgery. , 2019, , .		7
49	Estimating and Localizing External Forces Applied on Flexible Instruments by Shape Sensing. , 2019, , .		13
50	Setup and Method for Remote Center of Motion Positioning Guidance During Robot-Assisted Surgery. , 2019, , .		8
51	Towards Real-time Estimation of a Spherical Eye Model based on a Single Fiber OCT. , 2019, , .		2
52	Evaluation of Haptic Feedback on Bimanually Teleoperated Laparoscopy for Endometriosis Surgery. IEEE Transactions on Biomedical Engineering, 2019, 66, 1207-1221.	4.2	20
53	Deep Sequential Mosaicking of Fetoscopic Videos. Lecture Notes in Computer Science, 2019, , 311-319.	1.3	10
54	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

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55	Single Scan OCT-Based Retina Detection for Robot-Assisted Retinal Vein Cannulation. Journal of Medical Robotics Research, 2018, 03, 1840005.	1.2	7
56	Automatic Tool Landmark Detection for Stereo Vision in Robot-Assisted Retinal Surgery. IEEE Robotics and Automation Letters, 2018, 3, 612-619.	5.1	29
57	From a Disposable Ureteroscope to an Active Lightweight Fetoscope – Characterization and Usability Evaluation. IEEE Robotics and Automation Letters, 2018, 3, 4359-4366.	5.1	16
58	User-specific Gaussian Process Model of Wheelchair Drivers with a Haptic Joystick Interface. , 2018, , .		2
59	Development and Experimental Validation of a Combined FBG Force and OCT Distance Sensing Needle for Robot-Assisted Retinal Vein Cannulation. , 2018, , .		15
60	Innovative Bio-Impedance Sensor Towards Puncture Detection in Eye Surgery for Retinal Vein Occlusion Treatment. , 2018, , .		3
61	In-Human Robot-Assisted Retinal Vein Cannulation, A World First. Annals of Biomedical Engineering, 2018, 46, 1676-1685.	2.5	77
62	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
63	Leveraging the Fulcrum Point in Robotic Minimally Invasive Surgery. IEEE Robotics and Automation Letters, 2018, 3, 2071-2078.	5.1	20
64	A Continuum Robot and Control Interface for Surgical Assist in Fetoscopic Interventions. IEEE Robotics and Automation Letters, 2017, 2, 1656-1663.	5.1	43
65	3D Catheter Shape Reconstruction Using Electromagnetic and Image Sensors. Journal of Medical Robotics Research, 2017, 02, 1740009.	1.2	16
66	Body wall force sensor for simulated minimally invasive surgery: Application to fetal surgery. , 2017, , .		3
67	ToolNet: Holistically-nested real-time segmentation of robotic surgical tools. , 2017, , .		84
68	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
69	Robot-assisted retinal vein cannulation in an <i>in vivo</i> porcine retinal vein occlusion model. Acta Ophthalmologica, 2017, 95, 270-275.	1.1	44
70	Position control of robotic catheters inside the vasculature based on a predictive minimum energy model. , 2016, , .		2
71	Towards a clinically applicable robotic assistance system for retinal vein cannulation. , 2016, , .		16
72	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

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73	Cognitive AutonomouS CAtheters Operating in Dynamic Environments. Journal of Medical Robotics Research, 2016, 01, 1640011.	1.2	4
74	Intuitive Control Strategies for Teleoperation of Active Catheters in Endovascular Surgery. Journal of Medical Robotics Research, 2016, 01, 1640012.	1.2	7
75	An Automatic Registration Method for Radiation-Free Catheter Navigation Guidance. Journal of Medical Robotics Research, 2016, 01, 1640009.	1.2	4
76	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
77	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
78	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
79	Development and experimental validation of a force sensing needle for robotically assisted retinal vein cannulations. , 2015, , .		21
80	Intuitive teleoperation of active catheters for endovascular surgery. , 2015, , .		6
81	Fluidic actuation for intra-operative in situ imaging. , 2015, , .		17
82	Force control for tissue tensioning in precise robotic laser surgery. , 2015, , .		2
83	Constraint-Based Interaction Control of Robots Featuring Large Compliance and Deformation. IEEE Transactions on Robotics, 2015, 31, 1252-1260.	10.3	12
84	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
85	Bilateral Teleoperation: Quantifying the Requirements for and Restrictions of Ideal Transparency. IEEE Transactions on Control Systems Technology, 2014, 22, 387-395.	5.2	26
86	Design of a teleoperated robotic system for retinal surgery. , 2014, , .		24
87	Compliance computation for continuum types of robots. , 2014, , .		6
88	Experimental Validation of a Robotic Comanipulation and Telemanipulation System for Retinal Surgery. , 2014, , .		25
89	Towards Palpation in Virtual Reality by an Encountered-Type Haptic Screen. Lecture Notes in Computer Science, 2014, , 257-265.	1.3	5
90	Design and realisation of a novel robotic manipulator for retinal surgery. , 2013, , .		51

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91	Probabilistic approach to recognize local navigation plans by fusing past driving information with a personalized user model. , 2013, , .		14
92	Powered wheelchair navigation assistance through kinematically correct environmental haptic feedback. , 2012, , .		12
93	Catheter navigation based on probabilistic fusion of electromagnetic tracking and physically-based simulation. , 2012, , .		19
94	Backwards Maneuvering Powered Wheelchairs with Haptic Guidance. Lecture Notes in Computer Science, 2012, , 419-431.	1.3	3
95	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
96	Active, lifelong sensor synchronization: A Kalman filtering approach. , 2011, , .		0
97	On the use of shunt impedances versus bounded environment passivity for teleoperation systems. , 2011, , .		5
98	Transparency Trade-Offs for a 3-Channel Controller Revealed by the Bounded Environment Passivity Method. , 2010, , .		5
99	Mechatronic Design Optimization of a Teleoperation System Based on Bounded Environment Passivity. Lecture Notes in Computer Science, 2010, , 161-168.	1.3	0
100	Bounded environment passivity of the classical Position-Force teleoperation controller. , 2009, , .		21
101	Variable-Scale Bilateral Control for Micro Teleoperation. Journal of the Robotics Society of Japan, 2009, 27, 239-248.	0.1	3
102	Robust variable-scale bilateral control for micro teleoperation. , 2008, , .		20
103	Design and Evaluation of a Telepresence Vision System for Manipulation Tasks. , 2007, , .		2
104	Feeling a rigid virtual world through an impulsive haptic display. Advanced Robotics, 2007, 21, 1411-1440.	1.8	4
105	Impulse-based Control of an Impulsive Haptic Interface. , 2007, , .		1
106	Stability analysis and robust control for fixed-scale teleoperation. Advanced Robotics, 2006, 20, 681-706.	1.8	9
107	Rendering a Rigid Virtual World through an Impulsive Haptic Interface. , 2006, , .		8
108	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

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109	Automatic air bubble detection based on bio-impedance for safe drug delivery in retinal veins. , 0, , .		1