

Stefanie Speidel

List of Publications by Year in descending order

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Version: 2024-02-01

78
papers

2,951
citations

186265

28
h-index

175258

52
g-index

83
all docs

83
docs citations

83
times ranked

2898
citing authors

#	ARTICLE	IF	CITATIONS
1	Comparative Validation of Polyp Detection Methods in Video Colonoscopy: Results From the MICCAI 2015 Endoscopic Vision Challenge. <i>IEEE Transactions on Medical Imaging</i> , 2017, 36, 1231-1249.	8.9	297
2	Surgical data science for next-generation interventions. <i>Nature Biomedical Engineering</i> , 2017, 1, 691-696.	22.5	283
3	Optical techniques for 3D surface reconstruction in computer-assisted laparoscopic surgery. <i>Medical Image Analysis</i> , 2013, 17, 974-996.	11.6	217
4	Why rankings of biomedical image analysis competitions should be interpreted with care. <i>Nature Communications</i> , 2018, 9, 5217.	12.8	198
5	Machine Learning for Surgical Phase Recognition. <i>Annals of Surgery</i> , 2021, 273, 684-693.	4.2	135
6	Surgical data science – from concepts toward clinical translation. <i>Medical Image Analysis</i> , 2022, 76, 102306.	11.6	107
7	Exploiting the potential of unlabeled endoscopic video data with self-supervised learning. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2018, 13, 925-933.	2.8	93
8	Real-time image guidance in laparoscopic liver surgery: first clinical experience with a guidance system based on intraoperative CT imaging. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2014, 28, 933-940.	2.4	89
9	Comparative Validation of Single-Shot Optical Techniques for Laparoscopic 3-D Surface Reconstruction. <i>IEEE Transactions on Medical Imaging</i> , 2014, 33, 1913-1930.	8.9	88
10	Physics-based shape matching for intraoperative image guidance. <i>Medical Physics</i> , 2014, 41, 111901.	3.0	65
11	Dense GPU-enhanced surface reconstruction from stereo endoscopic images for intraoperative registration. <i>Medical Physics</i> , 2012, 39, 1632-1645.	3.0	59
12	Context-aware Augmented Reality in laparoscopic surgery. <i>Computerized Medical Imaging and Graphics</i> , 2013, 37, 174-182.	5.8	59
13	Can Masses of Non-Experts Train Highly Accurate Image Classifiers?. <i>Lecture Notes in Computer Science</i> , 2014, 17, 438-445.	1.3	56
14	Development and validation of a sensor- and expert model-based training system for laparoscopic surgery: the iSurgeon. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2017, 31, 2155-2165.	2.4	56
15	LapOntoSPM: an ontology for laparoscopic surgeries and its application to surgical phase recognition. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2015, 10, 1427-1434.	2.8	54
16	Toward a standard ontology of surgical process models. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2018, 13, 1397-1408.	2.8	54
17	Learning soft tissue behavior of organs for surgical navigation with convolutional neural networks. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2019, 14, 1147-1155.	2.8	53
18	A system for context-aware intraoperative augmented reality in dental implant surgery. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2015, 10, 101-108.	2.8	51

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19	Robot-Assisted Minimally Invasive Surgery – Surgical Robotics in the Data Age. Proceedings of the IEEE, 2022, 110, 835-846.	21.3	44
20	Generating Large Labeled Data Sets for Laparoscopic Image Processing Tasks Using Unpaired Image-to-Image Translation. Lecture Notes in Computer Science, 2019, , 119-127.	1.3	43
21	Active learning using deep Bayesian networks for surgical workflow analysis. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1079-1087.	2.8	41
22	Comparative validation of multi-instance instrument segmentation in endoscopy: Results of the ROBUST-MIS 2019 challenge. Medical Image Analysis, 2021, 70, 101920.	11.6	41
23	Tracking of Instruments in Minimally Invasive Surgery for Surgical Skill Analysis. Lecture Notes in Computer Science, 2006, , 148-155.	1.3	38
24	Heidelberg colorectal data set for surgical data science in the sensor operating room. Scientific Data, 2021, 8, 101.	5.3	37
25	Prediction of laparoscopic procedure duration using unlabeled, multimodal sensor data. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1089-1095.	2.8	36
26	IMHOTEP: virtual reality framework for surgical applications. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 741-748.	2.8	35
27	Pose-independent surface matching for intra-operative soft-tissue marker-less registration. Medical Image Analysis, 2014, 18, 1101-1114.	11.6	31
28	OpenHELP (Heidelberg laparoscopy phantom): development of an open-source surgical evaluation and training tool. Surgical Endoscopy and Other Interventional Techniques, 2015, 29, 3338-3347.	2.4	30
29	Crowdtruth validation: a new paradigm for validating algorithms that rely on image correspondences. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 1201-1212.	2.8	29
30	Generative adversarial networks for specular highlight removal in endoscopic images. , 2018, , .		29
31	A Delphi consensus statement for digital surgery. Npj Digital Medicine, 2022, 5, .	10.9	28
32	Investigating the utility of VR for spatial understanding in surgical planning: evaluation of head-mounted to desktop display. Scientific Reports, 2021, 11, 13440.	3.3	27
33	Crowdsourcing for Reference Correspondence Generation in Endoscopic Images. Lecture Notes in Computer Science, 2014, 17, 349-356.	1.3	26
34	Automatic classification of minimally invasive instruments based on endoscopic image sequences. Proceedings of SPIE, 2009, , .	0.8	25
35	SERV-CT: A disparity dataset from cone-beam CT for validation of endoscopic 3D reconstruction. Medical Image Analysis, 2022, 76, 102302.	11.6	22
36	IMHOTEP: cross-professional evaluation of a three-dimensional virtual reality system for interactive surgical operation planning, tumor board discussion and immersive training for complex liver surgery in a head-mounted display. Surgical Endoscopy and Other Interventional Techniques, 2022, 36, 126-134.	2.4	20

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37	Projective biomechanical depth matching for soft tissue registration in laparoscopic surgery. International Journal of Computer Assisted Radiology and Surgery, 2017, 12, 1101-1110.	2.8	19
38	Artificial Intelligence-Assisted Surgery: Potential and Challenges. Visceral Medicine, 2020, 36, 450-455.	1.3	19
39	Knowledge-Driven Formalization of Laparoscopic Surgeries for Rule-Based Intraoperative Context-Aware Assistance. Lecture Notes in Computer Science, 2014, , 158-167.	1.3	19
40	Bridging the gap between formal and experience-based knowledge for context-aware laparoscopy. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 881-888.	2.8	18
41	Temporal Coherence-based Self-supervised Learning for Laparoscopic Workflow Analysis. Lecture Notes in Computer Science, 2018, , 85-93.	1.3	18
42	Image-based laparoscopic bowel measurement. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 407-419.	2.8	17
43	Kidney edge detection in laparoscopic image data for computer-assisted surgery. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 379-387.	2.8	17
44	Recognition of risk situations based on endoscopic instrument tracking and knowledge based situation modeling. , 2008, , .		16
45	Electromagnetic organ tracking allows for real-time compensation of tissue shift in image-guided laparoscopic rectal surgery: results of a phantom study. Surgical Endoscopy and Other Interventional Techniques, 2016, 30, 495-503.	2.4	16
46	Non-Rigid Volume to Surface Registration Using a Data-Driven Biomechanical Model. Lecture Notes in Computer Science, 2020, , 724-734.	1.3	16
47	Gesture Recognition in Robotic Surgery With Multimodal Attention. IEEE Transactions on Medical Imaging, 2022, 41, 1677-1687.	8.9	16
48	Intraoperative on-the-fly organ-mosaicking for laparoscopic surgery. Journal of Medical Imaging, 2015, 2, 045001.	1.5	13
49	Long-Term Temporally Consistent Unpaired Video Translation from Simulated Surgical 3D Data. , 2021, , .		13
50	Automatic, global registration in laparoscopic liver surgery. International Journal of Computer Assisted Radiology and Surgery, 2022, 17, 167-176.	2.8	12
51	Rethinking Anticipation Tasks: Uncertainty-Aware Anticipation of Sparse Surgical Instrument Usage for Context-Aware Assistance. Lecture Notes in Computer Science, 2020, , 752-762.	1.3	11
52	Paradigm shift: cognitive surgery. Innovative Surgical Sciences, 2017, 2, 139-143.	0.7	9
53	Patch-based adaptive weighting with segmentation and scale (PAWSS) for visual tracking in surgical video. Medical Image Analysis, 2019, 57, 120-135.	11.6	9
54	Data-Driven Intra-Operative Estimation of Anatomical Attachments for Autonomous Tissue Dissection. IEEE Robotics and Automation Letters, 2021, 6, 1856-1863.	5.1	8

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55	Healing Hands: The Tactile Internet in Future Tele-Healthcare. <i>Sensors</i> , 2022, 22, 1404.	3.8	8
56	A biomechanical liver model for intraoperative soft tissue registration. , 2011, , .		7
57	Toward cognitive pipelines of medical assistance algorithms. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2016, 11, 1743-1753.	2.8	7
58	Ontology-based prediction of surgical events in laparoscopic surgery. , 2013, , .		6
59	MEDIASSIST: medical assistance for intraoperative skill transfer in minimally invasive surgery using augmented reality. , 2007, , .		5
60	Towards an open-source semantic data infrastructure for integrating clinical and scientific data in cognition-guided surgery. , 2016, , .		5
61	Computer-assisted 3D bowel length measurement for quantitative laparoscopy. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2018, 32, 4052-4061.	2.4	5
62	Interventional imaging: Vision. , 2020, , 721-745.		3
63	Comparison of Conventional Methods for Bowel Length Measurement in Laparoscopic Surgery to a Novel Computer-Assisted 3D Measurement System. <i>Obesity Surgery</i> , 2021, 31, 4692-4700.	2.1	3
64	Quadratic Corotated Finite Elements for Real-Time Soft Tissue Registration. , 2012, , 39-50.		3
65	An Interactive Virtual Reality Environment for Analysis of Clinical Atrial Arrhythmias and Ablation Planning. , 0, , .		3
66	Does caffeine consumption affect laparoscopic skills in a motion tracking analysis? A prospective, randomized, blinded crossover trial. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2022, 36, 4359-4368.	2.4	3
67	Integration of a biomechanical simulation for mitral valve reconstruction into a knowledge-based surgery assistance system. <i>Proceedings of SPIE</i> , 2015, , .	0.8	2
68	Superpixel-based structure classification for laparoscopic surgery. , 2016, , .		2
69	Lightweight distributed computing for intraoperative real-time image guidance. <i>Proceedings of SPIE</i> , 2012, , .	0.8	1
70	Non-invasive computation of aortic pressure maps: a phantom-based study of two approaches. , 2014, , .		1
71	Enhancing 4D PC-MRI in an aortic phantom considering numerical simulations. <i>Proceedings of SPIE</i> , 2015, , .	0.8	1
72	IPCAI 2018 Special Issue: Information Processing for Computer-Assisted Interventions, 9th International Conference 2018â€™Part 1. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2018, 13, 607-610.	2.8	1

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73	A case study: impact of target surface mesh size and mesh quality on volume-to-surface registration performance in hepatic soft tissue navigation. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1235-1245.	2.8	1
74	Using water-soluble additive manufacturing for cheap and soft silicon organ models. , 2018, , .		1
75	A Platform and Multisided Market for Translational, Software-Defined Medical Procedures in the Operating Room (OP 4.1): Proof-of-Concept Study. JMIR Medical Informatics, 2022, 10, e27743.	2.6	1
76	Model-based formalization of medical knowledge for context-aware assistance in laparoscopic surgery. , 2014, , .		0
77	Robust endoscopic pose estimation for intraoperative organ-mosaicking. Proceedings of SPIE, 2016, , .	0.8	0
78	Surgical assistance and training. , 2021, , 23-39.		0