

Gregory D Hager

List of Publications by Year in descending order

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Version: 2024-02-01

130
papers

5,790
citations

94269

37
h-index

102304

66
g-index

131
all docs

131
docs citations

131
times ranked

4869
citing authors

#	ARTICLE	IF	CITATIONS
1	Temporal Convolutional Networks: A Unified Approach to Action Segmentation. Lecture Notes in Computer Science, 2016, , 47-54.	1.0	308
2	Surgical data science for next-generation interventions. Nature Biomedical Engineering, 2017, 1, 691-696.	11.6	283
3	Augmented Reality During Robot-assisted Laparoscopic Partial Nephrectomy: Toward Real-Time 3D-CT to Stereoscopic Video Registration. Urology, 2009, 73, 896-900.	0.5	248
4	Review of methods for objective surgical skill evaluation. Surgical Endoscopy and Other Interventional Techniques, 2011, 25, 356-366.	1.3	198
5	Artificial intelligence to diagnose ischemic stroke and identify large vessel occlusions: a systematic review. Journal of NeuroInterventional Surgery, 2020, 12, 156-164.	2.0	194
6	Towards automatic skill evaluation: Detection and segmentation of robot-assisted surgical motions. Computer Aided Surgery, 2006, 11, 220-230.	1.8	186
7	A Dataset and Benchmarks for Segmentation and Recognition of Gestures in Robotic Surgery. IEEE Transactions on Biomedical Engineering, 2017, 64, 2025-2041.	2.5	181
8	X Vision: A Portable Substrate for Real-Time Vision Applications. Computer Vision and Image Understanding, 1998, 69, 23-37.	3.0	159
9	Ultrasound Elastography: A Dynamic Programming Approach. IEEE Transactions on Medical Imaging, 2008, 27, 1373-1377.	5.4	130
10	Tactile-Object Recognition From Appearance Information. IEEE Transactions on Robotics, 2011, 27, 473-487.	7.3	124
11	Surgical and Interventional Robotics - Core Concepts, Technology, and Design [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 122-130.	2.2	115
12	Segmental Spatiotemporal CNNs for Fine-Grained Action Segmentation. Lecture Notes in Computer Science, 2016, , 36-52.	1.0	115
13	Surgical gesture classification from video and kinematic data. Medical Image Analysis, 2013, 17, 732-745.	7.0	109
14	Surgical data science " from concepts toward clinical translation. Medical Image Analysis, 2022, 76, 102306.	7.0	107
15	Vision-Based Navigation in Image-Guided Interventions. Annual Review of Biomedical Engineering, 2011, 13, 297-319.	5.7	103
16	Objective Assessment of Surgical Technical Skill and Competency in the Operating Room. Annual Review of Biomedical Engineering, 2017, 19, 301-325.	5.7	100
17	CoSTAR: Instructing collaborative robots with behavior trees and vision. , 2017, , .		97
18	Scale-invariant registration of monocular endoscopic images to CT-scans for sinus surgery. Medical Image Analysis, 2005, 9, 413-426.	7.0	95

#	ARTICLE	IF	CITATIONS
19	Sampling-Based Motion and Symbolic Action Planning with geometric and differential constraints. , 2010, , .		88
20	A Unified Framework for Multi-view Multi-class Object Pose Estimation. Lecture Notes in Computer Science, 2018, , 263-281.	1.0	88
21	Dense Depth Estimation in Monocular Endoscopy With Self-Supervised Learning Methods. IEEE Transactions on Medical Imaging, 2020, 39, 1438-1447.	5.4	87
22	Semantic Stereo for Incidental Satellite Images. , 2019, , .		86
23	Human-Machine Collaborative surgery using learned models. , 2011, , .		70
24	Learning convolutional action primitives for fine-grained action recognition. , 2016, , .		68
25	Assessment of Automated Identification of Phases in Videos of Cataract Surgery Using Machine Learning and Deep Learning Techniques. JAMA Network Open, 2019, 2, e191860.	2.8	68
26	Vision-Based Control of a Handheld Surgical Micromanipulator With Virtual Fixtures. IEEE Transactions on Robotics, 2013, 29, 674-683.	7.3	65
27	A framework for end-user instruction of a robot assistant for manufacturing. , 2015, , .		63
28	Kernel-based visual servoing. , 2007, , .		61
29	Automated objective surgical skill assessment in the operating room from unstructured tool motion in septoplasty. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 981-991.	1.7	59
30	Incremental Focus of Attention for Robust Vision-Based Tracking. , 1999, 35, 45-63.		58
31	Transition state clustering: Unsupervised surgical trajectory segmentation for robot learning. International Journal of Robotics Research, 2017, 36, 1595-1618.	5.8	58
32	On the use of simulation in robotics: Opportunities, challenges, and suggestions for moving forward. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	55
33	Objective measures for longitudinal assessment of robotic surgery training. Journal of Thoracic and Cardiovascular Surgery, 2012, 143, 528-534.	0.4	53
34	A System for Video-Based Navigation for Endoscopic Endonasal Skull Base Surgery. IEEE Transactions on Medical Imaging, 2012, 31, 963-976.	5.4	53
35	A Nonparametric Treatment for Location/Segmentation Based Visual Tracking. , 2007, , .		52
36	Automated detection & classification of knee arthroplasty using deep learning. Knee, 2020, 27, 535-542.	0.8	52

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37	Deep Supervision with Shape Concepts for Occlusion-Aware 3D Object Parsing. , 2017, , .		51
38	Navigating inner space: 3-D assistance for minimally invasive surgery. Robotics and Autonomous Systems, 2005, 52, 5-26.	3.0	49
39	Evaluation and Stability Analysis of Video-Based Navigation System for Functional Endoscopic Sinus Surgery on <i>In Vivo</i> ; Clinical Data. IEEE Transactions on Medical Imaging, 2018, 37, 2185-2195.	5.4	49
40	Real-time Motion Stabilization with B-mode Ultrasound Using Image Speckle Information and Visual Servoing. International Journal of Robotics Research, 2009, 28, 1334-1354.	5.8	48
41	A Generalized Kernel Consensus-Based Robust Estimator. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2010, 32, 178-184.	9.7	47
42	Robot-Assisted Stapedotomy: Micropick Fenestration of the Stapes Footplate. Otolaryngology - Head and Neck Surgery, 2002, 127, 417-426.	1.1	45
43	Ultrasound elastography using multiple images. Medical Image Analysis, 2014, 18, 314-329.	7.0	45
44	Surgical and interventional robotics: part III [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 84-93.	2.2	44
45	Intra-operative ultrasound elasticity imaging for monitoring of hepatic tumour thermal ablation. Hpb, 2010, 12, 717-723.	0.1	42
46	Evaluation of a System for High-Accuracy 3D Image-Based Registration of Endoscopic Video to C-Arm Cone-Beam CT for Image-Guided Skull Base Surgery. IEEE Transactions on Medical Imaging, 2013, 32, 1215-1226.	5.4	41
47	Segmenting and classifying activities in robot-assisted surgery with recurrent neural networks. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 2005-2020.	1.7	40
48	Object mapping, recognition, and localization from tactile geometry. , 2011, , .		39
49	SAGES consensus recommendations on an annotation framework for surgical video. Surgical Endoscopy and Other Interventional Techniques, 2021, 35, 4918-4929.	1.3	39
50	Vision-Based Proximity Detection in Retinal Surgery. IEEE Transactions on Biomedical Engineering, 2012, 59, 2291-2301.	2.5	36
51	AUTOMATED IMAGE ALIGNMENT AND SEGMENTATION TO FOLLOW PROGRESSION OF GEOGRAPHIC ATROPHY IN AGE-RELATED MACULAR DEGENERATION. Retina, 2014, 34, 1296-1307.	1.0	36
52	Deep Supervision with Intermediate Concepts. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019, 41, 1828-1843.	9.7	35
53	An objective and automated method for assessing surgical skill in endoscopic sinus surgery using eye-tracking and tool-motion data. International Forum of Allergy and Rhinology, 2012, 2, 507-515.	1.5	34
54	â€œGood Robot!â€ Efficient Reinforcement Learning for Multi-Step Visual Tasks with Sim to Real Transfer. IEEE Robotics and Automation Letters, 2020, 5, 6724-6731.	3.3	33

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55	Multi-Environment Model Estimation for Motility Analysis of <i>Caenorhabditis elegans</i> . PLoS ONE, 2010, 5, e11631.	1.1	33
56	Automated semantic labeling of pediatric musculoskeletal radiographs using deep learning. Pediatric Radiology, 2019, 49, 1066-1070.	1.1	32
57	Automated detection and classification of shoulder arthroplasty models using deep learning. Skeletal Radiology, 2020, 49, 1623-1632.	1.2	32
58	String Motif-Based Description of Tool Motion for Detecting Skill and Gestures in Robotic Surgery. Lecture Notes in Computer Science, 2013, 16, 26-33.	1.0	32
59	Surgical data science: the new knowledge domain. Innovative Surgical Sciences, 2017, 2, 109-121.	0.4	31
60	Full Motion Tracking in Ultrasound Using Image Speckle Information and Visual Servoing. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	30
61	A Delphi consensus statement for digital surgery. Npj Digital Medicine, 2022, 5, .	5.7	28
62	Task-Level vs. Segment-Level Quantitative Metrics for Surgical Skill Assessment. Journal of Surgical Education, 2016, 73, 482-489.	1.2	26
63	Visual Robot Task Planning. , 2019, , .		26
64	Deep Learning Method for Automated Classification of Anteroposterior and Posteroanterior Chest Radiographs. Journal of Digital Imaging, 2019, 32, 925-930.	1.6	26
65	Scene parsing using a prior world model. International Journal of Robotics Research, 2011, 30, 1477-1507.	5.8	24
66	Analysis of the Structure of Surgical Activity for a Suturing and Knot-Tying Task. PLoS ONE, 2016, 11, e0149174.	1.1	24
67	Self-supervised Learning for Dense Depth Estimation in Monocular Endoscopy. Lecture Notes in Computer Science, 2018, , 128-138.	1.0	24
68	Refining dataset curation methods for deep learning-based automated tuberculosis screening. Journal of Thoracic Disease, 2020, 12, 5078-5085.	0.6	23
69	Ethical implications of AI in robotic surgical training: A Delphi consensus statement. European Urology Focus, 2022, 8, 613-622.	1.6	23
70	Deep Learning and Transfer Learning for Optic Disc Laterality Detection: Implications for Machine Learning in Neuro-Ophthalmology. Journal of Neuro-Ophthalmology, 2020, 40, 178-184.	0.4	22
71	Fundus Image Mosaicking for Information Augmentation in Computer-Assisted Slit-Lamp Imaging. IEEE Transactions on Medical Imaging, 2014, 33, 1304-1312.	5.4	21
72	System events: readily accessible features for surgical phase detection. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 1201-1209.	1.7	21

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73	Deep hierarchical multi-label classification applied to chest X-ray abnormality taxonomies. Medical Image Analysis, 2020, 66, 101811.	7.0	21
74	Large-Scale Semantic 3-D Reconstruction: Outcome of the 2019 IEEE GRSS Data Fusion Contestâ€”Part A. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 922-935.	2.3	21
75	Efficient particle filtering using RANSAC with application to 3D face tracking. Image and Vision Computing, 2006, 24, 581-592.	2.7	20
76	Incremental scene understanding on dense SLAM. , 2016, , .		20
77	Large-Scale Semantic 3-D Reconstruction: Outcome of the 2019 IEEE GRSS Data Fusion Contestâ€”Part B. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 1158-1170.	2.3	20
78	Image-based navigation for functional endoscopic sinus surgery using structure from motion. Proceedings of SPIE, 2016, 9784, .	0.8	19
79	An automated images-to-graphs framework for high resolution connectomics. Frontiers in Neuroinformatics, 2015, 9, 20.	1.3	18
80	Dynamic Guidance with Pseudoadmittance Virtual Fixtures. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	17
81	Adjutant: A framework for flexible human-machine collaborative systems. , 2014, , .		17
82	Radiology â€œforensicsâ€: determination of age and sex from chest radiographs using deep learning. Emergency Radiology, 2021, 28, 949-954.	1.0	17
83	Characterization and simulation of tactile sensors. , 2010, , .		16
84	Deep-Learning-Based Semantic Labeling for 2D Mammography and Comparison of Complexity for Machine Learning Tasks. Journal of Digital Imaging, 2019, 32, 565-570.	1.6	16
85	The deformable most-likely-point paradigm. Medical Image Analysis, 2019, 55, 148-164.	7.0	16
86	A Freehand Ultrasound Elastography System with Tracking for In Vivo Applications. Ultrasound in Medicine and Biology, 2013, 39, 211-225.	0.7	15
87	Deep Learning Detection of Sea Fan Neovascularization From Ultra-Widefield Color Fundus Photographs of Patients With Sickle Cell Hemoglobinopathy. JAMA Ophthalmology, 2021, 139, 206.	1.4	15
88	VICs: A modular HCI framework using spatiotemporal dynamics. Machine Vision and Applications, 2004, 16, 13-20.	1.7	14
89	Learning Geocentric Object Pose in Oblique Monocular Images. , 2020, , .		14
90	Artificial Intelligenceâ€”Based Clinical Decision Support for COVIDâ€”19â€”Where Art Thou?. Advanced Intelligent Systems, 2020, 2, 2000104.	3.3	14

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91	Image-based coronary tracking and beat-to-beat motion compensation: Feasibility for improving coronary MR angiography. <i>Magnetic Resonance in Medicine</i> , 2008, 60, 604-615.	1.9	13
92	Fine-Grained Activity Recognition for Assembly Videos. <i>IEEE Robotics and Automation Letters</i> , 2021, 6, 3728-3735.	3.3	13
93	Automatic segmentation and statistical shape modeling of the paranasal sinuses to estimate natural variations. <i>Proceedings of SPIE</i> , 2016, 9784, .	0.8	11
94	Reconstructing Sinus Anatomy from Endoscopic Video – Towards a Radiation-Free Approach for Quantitative Longitudinal Assessment. <i>Lecture Notes in Computer Science</i> , 2020, , 3-13.	1.0	11
95	Dynamic Template Tracking and Recognition. <i>International Journal of Computer Vision</i> , 2013, 105, 19-48.	10.9	10
96	Unsupervised surgical data alignment with application to automatic activity annotation. , 2016, , .		10
97	SAGE: SLAM with Appearance and Geometry Prior for Endoscopy. , 2022, , .		10
98	Control methods for guidance virtual fixtures in compliant human-machine interfaces. , 2008, , .		9
99	Bootstrapped ultrasound calibration. <i>Studies in Health Technology and Informatics</i> , 2006, 119, 61-6.	0.2	9
100	DeepCAT: Deep Computer-Aided Triage of Screening Mammography. <i>Journal of Digital Imaging</i> , 2021, 34, 27-35.	1.6	8
101	Anatomical Reconstruction from Endoscopic Images: Toward Quantitative Endoscopy. <i>American Journal of Rhinology & Allergy</i> , 2008, 22, 47-51.	2.3	7
102	Anatomical reconstructions of pediatric airways from endoscopic images: A pilot study of the accuracy of quantitative endoscopy. <i>Laryngoscope</i> , 2013, 123, 2880-2887.	1.1	7
103	Elastography Using Multi-Stream GPU: An Application to Online Tracked Ultrasound Elastography, In-Vivo and the da Vinci Surgical System. <i>PLoS ONE</i> , 2014, 9, e115881.	1.1	7
104	Beyond spatial pooling: Fine-grained representation learning in multiple domains. , 2015, , .		7
105	Query-by-example surgical activity detection. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2016, 11, 987-996.	1.7	7
106	A multi-camera, multi-view system for training and skill assessment for robot-assisted surgery. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2020, 15, 1369-1377.	1.7	7
107	Color-based hybrid reconstruction for endoscopy. , 2012, , .		6
108	Parallelism in Autonomous Robotic Surgery. <i>IEEE Robotics and Automation Letters</i> , 2021, 6, 1824-1831.	3.3	6

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109	A Meta Method for Image Matching. IEEE Transactions on Medical Imaging, 2011, 30, 1468-1479.	5.4	5
110	Analysis of composite gestures with a coherent probabilistic graphical model. Virtual Reality, 2005, 8, 242-252.	4.1	4
111	Active background modeling: Actors on a stage. , 2009, , .		4
112	Sequential scene parsing using range and intensity information. , 2012, , .		4
113	Endoscopic navigation in the clinic: registration in the absence of preoperative imaging. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 1495-1506.	1.7	4
114	Localization and Control of Magnetic Suture Needles in Cluttered Surgical Site with Blood and Tissue. , 2021, 2021, 524-531.		4
115	Intelligent frame selection for anatomic reconstruction from endoscopic video. , 2009, , .		3
116	The CoSTAR Block Stacking Dataset: Learning with Workspace Constraints. , 2019, , .		3
117	Association Between Surgical Trainee Daytime Sleepiness and Intraoperative Technical Skill When Performing Septoplasty. JAMA Facial Plastic Surgery, 2019, 21, 104-109.	2.2	3
118	Pre-Clinical Development of Robot-Assisted Ventriculoscopy for 3-D Image Reconstruction and Guidance of Deep Brain Neurosurgery. IEEE Transactions on Medical Robotics and Bionics, 2022, 4, 28-37.	2.1	3
119	Characterizing the Details of Spatial Construction: Cognitive Constraints and Variability. Cognitive Science, 2022, 46, e13081.	0.8	3
120	Deformable Motion Tracking of Cardiac Structures (DEMOTRACS) for Improved MR Imaging. , 2007, , .		2
121	Special Issue on Robotic Vision. International Journal of Robotics Research, 2012, 31, 379-380.	5.8	2
122	Five-dimensional ultrasound system for soft tissue visualization. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 1927-1939.	1.7	2
123	Toward Computer Vision Systems That Understand Real-World Assembly Processes. , 2019, , .		2
124	Computational Vision at Yale. International Journal of Computer Vision, 1999, 35, 5-12.	10.9	1
125	Do Attending and Trainee Surgeons Agree on What Happens in the Operating Room During Septoplasty?. Facial Plastic Surgery and Aesthetic Medicine, 2022, , .	0.5	1
126	Responding to a Pandemic: COVID-19 Projects in the Malone Center. Surgical Innovation, 2021, 28, 208-213.	0.4	0

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127	Recovering Physiological Changes in Nasal Anatomy with Confidence Estimates. Lecture Notes in Computer Science, 2019, , 115-124.	1.0	0
128	Reconstructing the nasal septum from instrument motion during septoplasty surgery. Journal of Medical Imaging, 2021, 8, 065001.	0.8	0
129	Robust Policy Search for an Agile Ground Vehicle Under Perception Uncertainty. , 2021, , .		0
130	Learning from Synthetic Vehicles. , 2022, , .		0