Gregory D Hager

List of Publications by Year
in descending order

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130 papers	5,790 citations	94433 37 h-index	102487 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.	1.3	308
2	Surgical data science for next-generation interventions. Nature Biomedical Engineering, 2017, 1, 691-696.	22.5	283
3	Augmented Reality During Robot-assisted Laparoscopic Partial Nephrectomy: Toward Real-Time 3D-CT to Stereoscopic Video Registration. Urology, 2009, 73, 896-900.	1.0	248
4	Review of methods for objective surgical skill evaluation. Surgical Endoscopy and Other Interventional Techniques, 2011, 25, 356-366.	2.4	198
5	Artificial intelligence to diagnose ischemic stroke and identify large vessel occlusions: a systematic review. Journal of NeuroInterventional Surgery, 2020, 12, 156-164.	3.3	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.	4.2	181
8	X Vision: A Portable Substrate for Real-Time Vision Applications. Computer Vision and Image Understanding, 1998, 69, 23-37.	4.7	159
9	Ultrasound Elastography: A Dynamic Programming Approach. IEEE Transactions on Medical Imaging, 2008, 27, 1373-1377.	8.9	130
10	Tactile-Object Recognition From Appearance Information. IEEE Transactions on Robotics, 2011, 27, 473-487.	10.3	124
11	Surgical and Interventional Robotics - Core Concepts, Technology, and Design [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 122-130.	2.0	115
12	Segmental Spatiotemporal CNNs for Fine-Grained Action Segmentation. Lecture Notes in Computer Science, 2016, , 36-52.	1.3	115
13	Surgical gesture classification from video and kinematic data. Medical Image Analysis, 2013, 17, 732-745.	11.6	109
14	Surgical data science â€“ from concepts toward clinical translation. Medical Image Analysis, 2022, 76, 102306.	11.6	107
15	Vision-Based Navigation in Image-Guided Interventions. Annual Review of Biomedical Engineering, 2011, 13, 297-319.	12.3	103
16	Objective Assessment of Surgical Technical Skill and Competency in the Operating Room. Annual Review of Biomedical Engineering, 2017, 19, 301-325.	12.3	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.	11.6	95

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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.	1.3	88
21	Dense Depth Estimation in Monocular Endoscopy With Self-Supervised Learning Methods. IEEE Transactions on Medical Imaging, 2020, 39, 1438-1447.	8.9	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.	5.9	68
26	Vision-Based Control of a Handheld Surgical Micromanipulator With Virtual Fixtures. IEEE Transactions on Robotics, 2013, 29, 674-683.	10.3	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.	2.8	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.	8.5	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, .	7.1	55
33	Objective measures for longitudinal assessment of robotic surgery training. Journal of Thoracic and Cardiovascular Surgery, 2012, 143, 528-534.	0.8	53
34	A System for Video-Based Navigation for Endoscopic Endonasal Skull Base Surgery. IEEE Transactions on Medical Imaging, 2012, 31, 963-976.	8.9	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.	1.6	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.	5.1	49
39	Evaluation and Stability Analysis of Video-Based Navigation System for Functional Endoscopic Sinus Surgery on <italic>In Vivo</italic> Clinical Data. IEEE Transactions on Medical Imaging, 2018, 37, 2185-2195.	8.9	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.	8.5	48
41	A Generalized Kernel Consensus-Based Robust Estimator. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2010, 32, 178-184.	13.9	47
42	Robot-Assisted Stapedotomy: Micropick Fenestration of the Stapes Footplate. Otolaryngology - Head and Neck Surgery, 2002, 127, 417-426.	1.9	45
43	Ultrasound elastography using multiple images. Medical Image Analysis, 2014, 18, 314-329.	11.6	45
44	Surgical and interventional robotics: part III [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 84-93.	2.0	44
45	Intra-operative ultrasound elasticity imaging for monitoring of hepatic tumour thermal ablation. Hpb, 2010, 12, 717-723.	0.3	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.	8.9	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.	2.8	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.	2.4	39
50	Vision-Based Proximity Detection in Retinal Surgery. IEEE Transactions on Biomedical Engineering, 2012, 59, 2291-2301.	4.2	36
51	AUTOMATED IMAGE ALIGNMENT AND SEGMENTATION TO FOLLOW PROGRESSION OF GEOGRAPHIC ATROPHY IN AGE-RELATED MACULAR DEGENERATION. Retina, 2014, 34, 1296-1307.	1.7	36
52	Deep Supervision with Intermediate Concepts. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019, 41, 1828-1843.	13.9	35
53	An objective and automated method for assessing surgical skill in endoscopic sinus surgery using eyeâ€tracking and toolâ€motion data. International Forum of Allergy and Rhinology, 2012, 2, 507-515.	2.8	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.	5.1	33

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55	Multi-Environment Model Estimation for Motility Analysis of Caenorhabditis elegans. PLoS ONE, 2010, 5, e11631.	2.5	33
56	Automated semantic labeling of pediatric musculoskeletal radiographs using deep learning. Pediatric Radiology, 2019, 49, 1066-1070.	2.0	32
57	Automated detection and classification of shoulder arthroplasty models using deep learning. Skeletal Radiology, 2020, 49, 1623-1632.	2.0	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.	1.3	32
59	Surgical data science: the new knowledge domain. Innovative Surgical Sciences, 2017, 2, 109-121.	0.7	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, .	10.9	28
62	Task-Level vs. Segment-Level Quantitative Metrics for Surgical Skill Assessment. Journal of Surgical Education, 2016, 73, 482-489.	2.5	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.	2.9	26
65	Scene parsing using a prior world model. International Journal of Robotics Research, 2011, 30, 1477-1507.	8.5	24
66	Analysis of the Structure of Surgical Activity for a Suturing and Knot-Tying Task. PLoS ONE, 2016, 11, e0149174.	2.5	24
67	Self-supervised Learning for Dense Depth Estimation in Monocular Endoscopy. Lecture Notes in Computer Science, 2018, , 128-138.	1.3	24
68	Refining dataset curation methods for deep learning-based automated tuberculosis screening. Journal of Thoracic Disease, 2020, 12, 5078-5085.	1.4	23
69	Ethical implications of AI in robotic surgical training: A Delphi consensus statement. European Urology Focus, 2022, 8, 613-622.	3.1	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.	0.8	22
71	Fundus Image Mosaicking for Information Augmentation in Computer-Assisted Slit-Lamp Imaging. IEEE Transactions on Medical Imaging, 2014, 33, 1304-1312.	8.9	21
72	System events: readily accessible features for surgical phase detection. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 1201-1209.	2.8	21

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73	Deep hiearchical multi-label classification applied to chest X-ray abnormality taxonomies. Medical Image Analysis, 2020, 66, 101811.	11.6	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.	4.9	21
75	Efficient particle filtering using RANSAC with application to 3D face tracking. Image and Vision Computing, 2006, 24, 581-592.	4.5	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.	4.9	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.	2.5	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.	1.8	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.	2.9	16
85	The deformable most-likely-point paradigm. Medical Image Analysis, 2019, 55, 148-164.	11.6	16
86	A Freehand Ultrasound Elastography System with Tracking for In Vivo Applications. Ultrasound in Medicine and Biology, 2013, 39, 211-225.	1.5	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.	2.5	15
88	VICs: A modular HCI framework using spatiotemporal dynamics. Machine Vision and Applications, 2004, 16, 13-20.	2.7	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.	6.1	14

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91	Imageâ€based coronary tracking and beatâ€toâ€beat motion compensation: Feasibility for improving coronary MR angiography. Magnetic Resonance in Medicine, 2008, 60, 604-615.	3.0	13
92	Fine-Grained Activity Recognition for Assembly Videos. IEEE Robotics and Automation Letters, 2021, 6, 3728-3735.	5.1	13
93	Automatic segmentation and statistical shape modeling of the paranasal sinuses to estimate natural variations. Proceedings of SPIE, 2016, 9784, .	0.8	11
94	Reconstructing Sinus Anatomy from Endoscopic Video â€“ Towards a Radiation-Free Approach for Quantitative Longitudinal Assessment. Lecture Notes in Computer Science, 2020, , 3-13.	1.3	11
95	Dynamic Template Tracking and Recognition. International Journal of Computer Vision, 2013, 105, 19-48.	15.6	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. Studies in Health Technology and Informatics, 2006, 119, 61-6.	0.3	9
100	DeepCAT: Deep Computer-Aided Triage of Screening Mammography. Journal of Digital Imaging, 2021, 34, 27-35.	2.9	8
101	Anatomical Reconstruction from Endoscopic Images: Toward Quantitative Endoscopy. American Journal of Rhinology & Allergy, 2008, 22, 47-51.	2.2	7
102	Anatomical reconstructions of pediatric airways from endoscopic images: A pilot study of the accuracy of quantitative endoscopy. Laryngoscope, 2013, 123, 2880-2887.	2.0	7
103	Elastography Using Multi-Stream GPU: An Application to Online Tracked Ultrasound Elastography, In-Vivo and the da Vinci Surgical System. PLoS ONE, 2014, 9, e115881.	2.5	7
104	Beyond spatial pooling: Fine-grained representation learning in multiple domains. , 2015, , .		7
105	Query-by-example surgical activity detection. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 987-996.	2.8	7
106	A multi-camera, multi-view system for training and skill assessment for robot-assisted surgery. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1369-1377.	2.8	7
107	Color-based hybrid reconstruction for endoscopy. , 2012, , .		6
108	Parallelism in Autonomous Robotic Surgery. IEEE Robotics and Automation Letters, 2021, 6, 1824-1831.	5.1	6

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109	A Meta Method for Image Matching. IEEE Transactions on Medical Imaging, 2011, 30, 1468-1479.	8.9	5
110	Analysis of composite gestures with a coherent probabilistic graphical model. Virtual Reality, 2005, 8, 242-252.	6.1	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.	2.8	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.	2.1	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.	3.2	3
119	Characterizing the Details of Spatial Construction: Cognitive Constraints and Variability. Cognitive Science, 2022, 46, e13081.	1.7	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.	8.5	2
122	Five-dimensional ultrasound system for soft tissue visualization. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 1927-1939.	2.8	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.	15.6	1
125	Do Attending and Trainee Surgeons Agree on What Happens in the Operating Room During Septoplasty?. Facial Plastic Surgery and Aesthetic Medicine, 2022, , .	0.9	1
126	Responding to a Pandemic: COVID-19 Projects in the Malone Center. Surgical Innovation, 2021, 28, 208-213.	0.9	0

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127	Recovering Physiological Changes in Nasal Anatomy with Confidence Estimates. Lecture Notes in Computer Science, 2019, , 115-124.	1.3	0
128	Reconstructing the nasal septum from instrument motion during septoplasty surgery. Journal of Medical Imaging, 2021, 8, 065001.	1.5	0
129	Robust Policy Search for an Agile Ground Vehicle Under Perception Uncertainty. , 2021, , .		0
130	Learning from Synthetic Vehicles. , 2022, , .		0