Holger R Roth

List of Publications by Year
in descending order

104 papers	9,876 citations	201385 27 h-index	62479 80 g-index
110 all docs	110 docs citations	110 times ranked	11472 citing authors

#	Article	IF	Citations
1	Deep Convolutional Neural Networks for Computer-Aided Detection: CNN Architectures, Dataset Characteristics and Transfer Learning. IEEE Transactions on Medical Imaging, 2016, 35, 1285-1298.	5.4	4,024
2	The future of digital health with federated learning. Npj Digital Medicine, 2020, 3, 119.	5.7	887
3	Improving Computer-Aided Detection Using<?Pub _newline?>Convolutional Neural Networks and Random View Aggregation. IEEE Transactions on Medical Imaging, 2016, 35, 1170-1181.	5.4	465
4	Artificial intelligence for the detection of COVID-19 pneumonia on chest CT using multinational datasets. Nature Communications, 2020, 11, 4080.	5.8	405
5	DeepOrgan: Multi-level Deep Convolutional Networks for Automated Pancreas Segmentation. Lecture Notes in Computer Science, 2015, , 556-564.	1.0	347
6	Federated learning for predicting clinical outcomes in patients with COVID-19. Nature Medicine, 2021, 27, 1735-1743.	15.2	300
7	A New 2.5D Representation for Lymph Node Detection Using Random Sets of Deep Convolutional Neural Network Observations. Lecture Notes in Computer Science, 2014, 17, 520-527.	1.0	286
8	Artificial Intelligence-Assisted Polyp Detection for Colonoscopy: Initial Experience. Gastroenterology, 2018, 154, 2027-2029.e3.	0.6	281
9	Spatial aggregation of holistically-nested convolutional neural networks for automated pancreas localization and segmentation. Medical Image Analysis, 2018, 45, 94-107.	7.0	255
10	An application of cascaded 3D fully convolutional networks for medical image segmentation. Computerized Medical Imaging and Graphics, 2018, 66, 90-99.	3.5	227
11	Generalizing Deep Learning for Medical Image Segmentation to Unseen Domains via Deep Stacked Transformation. IEEE Transactions on Medical Imaging, 2020, 39, 2531-2540.	5.4	220
12	Holistic classification of CT attenuation patterns for interstitial lung diseases via deep convolutional neural networks. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2018, 6, 1-6.	1.3	172
13	Federated semi-supervised learning for COVID region segmentation in chest CT using multi-national data from China, Italy, Japan. Medical Image Analysis, 2021, 70, 101992.	7.0	140
14	Uncertainty-aware multi-view co-training for semi-supervised medical image segmentation and domain adaptation. Medical Image Analysis, 2020, 65, 101766.	7.0	137
15	A Bottom-Up Approach for Pancreas Segmentation Using Cascaded Superpixels and (Deep) Image Patch Labeling. IEEE Transactions on Image Processing, 2017, 26, 386-399.	6.0	136
16	Deep learning to distinguish pancreatic cancer tissue from non-cancerous pancreatic tissue: a retrospective study with cross-racial external validation. The Lancet Digital Health, 2020, 2, e303-e313.	5.9	121
17	Anatomy-specific classification of medical images using deep convolutional nets. , 2015, , .		109
18	Federated learning improves site performance in multicenter deep learning without data sharing. Journal of the American Medical Informatics Association: JAMIA, 2021, 28, 1259-1264.	2.2	93

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19	Spatial Aggregation of Holistically-Nested Networks for Automated Pancreas Segmentation. Lecture Notes in Computer Science, 2016, , 451-459.	1.0	88
20	C2FNAS: Coarse-to-Fine Neural Architecture Search for 3D Medical Image Segmentation. , 2020, , .		80
21	Deep convolutional networks for pancreas segmentation in CT imaging. Proceedings of SPIE, 2015, , .	0.8	60
22	A Multi-scale Pyramid of 3D Fully Convolutional Networks for Abdominal Multi-organ Segmentation. Lecture Notes in Computer Science, 2018, , 417-425.	1.0	55
23	Automatic magnetic resonance prostate segmentation by deep learning with holistically nested networks. Journal of Medical Imaging, 2017, 4, 1.	0.8	55
24	Radiomics nomogram for predicting the malignant potential of gastrointestinal stromal tumours preoperatively. European Radiology, 2019, 29, 1074-1082.	2.3	52
25	BESNet: Boundary-Enhanced Segmentation of Cells in Histopathological Images. Lecture Notes in Computer Science, 2018, , 228-236.	1.0	46
26	2D View Aggregation for Lymph Node Detection Using a Shallow Hierarchy of Linear Classifiers. Lecture Notes in Computer Science, 2014, 17, 544-552.	1.0	38
27	Detection of Sclerotic Spine Metastases viaÂRandom Aggregation of Deep ConvolutionalÂNeural Network Classifications. Lecture Notes in Computational Vision and Biomechanics, 2015, , 3-12.	0.5	34
28	Automatic Lymph Node Cluster Segmentation Using Holistically-Nested Neural Networks andÂStructured Optimization in CT Images. Lecture Notes in Computer Science, 2016, , 388-397.	1.0	31
29	Convolutional neural network based deep-learning architecture for prostate cancer detection on multiparametric magnetic resonance images. Proceedings of SPIE, 2017, , .	0.8	30
30	Diminishing Uncertainty Within the Training Pool: Active Learning for Medical Image Segmentation. IEEE Transactions on Medical Imaging, 2021, 40, 2534-2547.	5.4	28
31	Registration of the endoluminal surfaces of the colon derived from prone and supine CT colonography. Medical Physics, 2011, 38, 3077-3089.	1.6	25
32	Tracking and Segmentation of the Airways in Chest CT Using a Fully Convolutional Network. Lecture Notes in Computer Science, 2017, , 198-207.	1.0	25
33	Searching Learning Strategy with Reinforcement Learning for 3D Medical Image Segmentation. Lecture Notes in Computer Science, 2019, , 3-11.	1.0	25
34	Unsupervised segmentation of 3D medical images based on clustering and deep representation learning. , 2018, , .		25
35	Leveraging Mid-Level Semantic Boundary Cues for Automated Lymph Node Detection. Lecture Notes in Computer Science, 2015, , 53-61.	1.0	24
36	Deep convolutional networks for automated detection of posterior-element fractures on spine CT. Proceedings of SPIE, 2016, , .	0.8	23

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37	Data Augmentation and Transfer Learning to Improve Generalizability of an Automated Prostate Segmentation Model. American Journal of Roentgenology, 2020, 215, 1403-1410.	1.0	23
38	Active appearance model and deep learning for more accurate prostate segmentation on MRI. Proceedings of SPIE, 2016, , .	0.8	22
39	Radiomic Features at CT Can Distinguish Pancreatic Cancer from Noncancerous Pancreas. Radiology Imaging Cancer, 2021, 3, e210010.	0.7	22
40	Cardiac segmentation on late gadolinium enhancement MRI: A benchmark study from multi-sequence cardiac MR segmentation challenge. Medical Image Analysis, 2022, 81, 102528.	7.0	22
41	Going to Extremes: Weakly Supervised Medical Image Segmentation. Machine Learning and Knowledge Extraction, 2021, 3, 507-524.	3.2	21
42	Abdominal artery segmentation method from CT volumes using fully convolutional neural network. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 2069-2081.	1.7	20
43	Precise estimation of renal vascular dominant regions using spatially aware fully convolutional networks, tensor-cut and Voronoi diagrams. Computerized Medical Imaging and Graphics, 2019, 77, 101642.	3.5	18
44	Deep learning-based artificial intelligence for prostate cancer detection at biparametric MRI. Abdominal Radiology, 2022, 47, 1425-1434.	1.0	18
45	Federated Whole Prostate Segmentation in MRI with Personalized Neural Architectures. Lecture Notes in Computer Science, 2021, , 357-366.	1.0	17
46	Technical and Clinical Factors Affecting Success Rate of a Deep Learning Method for Pancreas Segmentation on CT. Academic Radiology, 2020, 27, 689-695.	1.3	16
47	Accounting for Dependencies in Deep Learning Based Multiple Instance Learning for Whole Slide Imaging. Lecture Notes in Computer Science, 2021, , 329-338.	1.0	16
48	Fully automated prostate whole gland and central gland segmentation on MRI using holistically nested networks with short connections. Journal of Medical Imaging, 2019, 6, 1.	0.8	14
49	Automated Pancreas Segmentation Using Multi-institutional Collaborative Deep Learning. Lecture Notes in Computer Science, 2020, , 192-200.	1.0	13
50	Endoluminal surface registration for CT colonography using haustral fold matching. Medical Image Analysis, 2013, 17, 946-958.	7.0	12
51	Dense volumetric detection and segmentation of mediastinal lymph nodes in chest CT images. , 2018, , .		12
52	Deep learning with orthogonal volumetric HED segmentation and 3D surface reconstruction model of prostate MRI. , 2017, , .		11
53	An analysis of robust cost functions for CNN in computer-aided diagnosis. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2018, 6, 253-258.	1.3	11
54	Guest Editorial Annotation-Efficient Deep Learning: The Holy Grail of Medical Imaging. IEEE Transactions on Medical Imaging, 2021, 40, 2526-2533.	5.4	10

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55	Holistic segmentation of the lung in cine MRI. Journal of Medical Imaging, 2017, 4, 1.	0.8	9
56	Weakly Supervised Segmentation from Extreme Points. Lecture Notes in Computer Science, 2019, , 42-50.	1.0	9
57	Precision Medicine in Pancreatic Disease—Knowledge Gaps and Research Opportunities. Pancreas, 2019, 48, 1250-1258.	0.5	9
58	Towards Automated Colonoscopy Diagnosis: Binary Polyp Size Estimation via Unsupervised Depth Learning. Lecture Notes in Computer Science, 2018, , 611-619.	1.0	9
59	End-to-End Adversarial Shape Learning for Abdomen Organ Deep Segmentation. Lecture Notes in Computer Science, 2019, , 124-132.	1.0	9
60	Automatic Prone to Supine Haustral Fold Matching in CT Colonography Using a Markov Random Field Model. Lecture Notes in Computer Science, 2011, 14, 508-515.	1.0	9
61	Unsupervised pathology image segmentation using representation learning with spherical k-means. , 2018, , .		9
62	Three Aspects on Using Convolutional Neural Networks for Computer-Aided Detection in Medical Imaging. Advances in Computer Vision and Pattern Recognition, 2017, , 113-136.	0.9	8
63	Lung segmentation based on a deep learning approach for dynamic chest radiography. , 2019, , .		8
64	Weakly-supervised deep learning of interstitial lung disease types on CT images. , 2019, , .		8
65	Multi-atlas Segmentation with Joint Label Fusion of Osteoporotic Vertebral Compression Fractures on CT. Lecture Notes in Computer Science, 2016, , 74-84.	1.0	7
66	Unsupervised Segmentation of Micro-CT Images of Lung Cancer Specimen Using Deep Generative Models. Lecture Notes in Computer Science, 2019, , 240-248.	1.0	7
67	Towards dense volumetric pancreas segmentation in CT using 3D fully convolutional networks. , 2018, , .		7
68	Tunable CT Lung Nodule Synthesis Conditioned on Background Image and Semantic Features. Lecture Notes in Computer Science, 2019, , 62-70.	1.0	7
69	Multi-task Federated Learning for Heterogeneous Pancreas Segmentation. Lecture Notes in Computer Science, 2021, , 101-110.	1.0	7
70	A cascaded fully convolutional network framework for dilated pancreatic duct segmentation. International Journal of Computer Assisted Radiology and Surgery, 2022, 17, 343-354.	1.7	7
71	CT Colonography: External Clinical Validation of an Algorithm for Computer-assisted Prone and Supine Registration. Radiology, 2013, 268, 752-760.	3.6	6
72	Establishing Spatial Correspondence between the Inner Colon Surfaces from Prone and Supine CT Colonography. Lecture Notes in Computer Science, 2010, 13, 497-504.	1.0	6

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73	Stable polypâ€scene classification via subsampling and residual learning from an imbalanced large dataset. Healthcare Technology Letters, 2019, 6, 237-242.	1.9	5
74	Automatic Pancreas Segmentation Using Coarse-to-Fine Superpixel Labeling. Advances in Computer Vision and Pattern Recognition, 2017, , 279-302.	0.9	4
75	Efficient False Positive Reduction in Computer-Aided Detection Using Convolutional Neural Networks and Random View Aggregation. Advances in Computer Vision and Pattern Recognition, 2017, , 35-48.	0.9	4
76	3D FCN Feature Driven Regression Forest-Based Pancreas Localization and Segmentation. Lecture Notes in Computer Science, 2017, , 222-230.	1.0	4
77	Improving V-Nets for multi-class abdominal organ segmentation. , 2019, , .		4
78	Interactive 3D Segmentation Editing and Refinement via Gated Graph Neural Networks. Lecture Notes in Computer Science, 2019, , 9-17.	1.0	3
79	Micro-CT Guided 3D Reconstruction ofÂHistological Images. Lecture Notes in Computer Science, 2017, , 93-101.	1.0	3
80	External Clinical Validation of Prone and Supine CT Colonography Registration. Lecture Notes in Computer Science, 2012, , 10-19.	1.0	2
81	CT Colonography: Clinical Evaluation of a Method for Automatic Coregistration of Polyps at Follow-up Surveillance Studies. Radiology, 2014, 273, 417-424.	3.6	2
82	Improving vertebra segmentation through joint vertebra-rib atlases. Proceedings of SPIE, 2016, , .	0.8	2
83	Automatic MR prostate segmentation by deep learning with holistically-nested networks. Proceedings of SPIE, 2017, , .	0.8	2
84	Comparison of the deep-learning-based automated segmentation methods for the head sectioned images of the virtual Korean human project. , 2017, , .		2
85	Prone to Supine CT Colonography Registration Using a Landmark and Intensity Composite Method. Lecture Notes in Computer Science, 2012, , 1-9.	1.0	2
86	Computer-assisted polyp matching between optical colonoscopy and CT colonography: a phantom study. , 2014, , .		1
87	Motion Vector for Outlier Elimination in Feature Matching and Its Application in SLAM Based Laparoscopic Tracking. Lecture Notes in Computer Science, 2017, , 60-69.	1.0	1
88	Fully Convolutional Network-Based Eyeball Segmentation from Sparse Annotation for Eye Surgery SimulationÂModel. Lecture Notes in Computer Science, 2018, , 118-126.	1.0	1
89	Performance improvement of weakly supervised fully convolutional networks by skip connections for brain structure segmentation. Medical Physics, 2021, 48, 7215-7227.	1.6	1
90	Inverse Consistency Error in the Registration of Prone and Supine Images in CT Colonography. Lecture Notes in Computer Science, 2012, , 1-7.	1.0	1

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91	Automatic segmentation of eyeball structures from micro-CT images based on sparse annotation. , 2018, , .		1
92	Scanning, registration, and fiber estimation of rabbit hearts using micro-focus and refraction-contrast x-ray CT. , 2019, , .		1
93	Colonoscope tracking method based on shape estimation network. , 2019, , .		1
94	Dynamic chest radiography for pulmonary function diagnosis: A validation study using 4D extended cardiac-torso (XCAT) phantom. , 2019, , .		1
95	Cardiac fiber tracking on super high-resolution CT images: a comparative study. Journal of Medical Imaging, 2020, 7, 1.	0.8	1
96	Establishing spatial correspondence for the analysis of images from highly deforming anatomy. , 2012, 2012, 3732-5.		0
97	CT colonography: inverse-consistent symmetric registration of prone and supine inner colon surfaces. , 2013, , .		0
98	Automatic segmentation of head anatomical structures from sparsely-annotated images. , 2017, , .		0
99	Registration of Temporally Separated CT Colonography Cases. Lecture Notes in Computer Science, 2013, , 46-52.	1.0	0
100	Registration of Prone and Supine CT Colonography Datasets with Differing Endoluminal Distension. Lecture Notes in Computer Science, 2013, , 29-38.	1.0	0
101	Spatial Correspondence between Prone and Supine CT Colonography Images: Creating a Reference Standard. Lecture Notes in Computer Science, 2013, , 39-45.	1.0	0
102	Unsupervised segmentation of micro-CT images based on a hybrid of variational inference and adversarial learning. , 2019, , .		0
103	Polyp-size classification with RGB-D features for colonoscopy. , 2019, , .		0
104	Automatic detection of decreased ejection fraction and left ventricular hypertrophy on 4D cardiac CTA: Use of artificial intelligence with transfer learning to facilitate multi-site operations. Intelligence-based Medicine, 2022, 6, 100051.	1.4	0