

# Hassan Rivaz

## List of Publications by Year in descending order

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111  
papers

1,999  
citations

279487

23  
h-index

301761

39  
g-index

113  
all docs

113  
docs citations

113  
times ranked

1332  
citing authors

#	ARTICLE	IF	CITATIONS
1	Bi-Directional Semi-Supervised Training of Convolutional Neural Networks for Ultrasound Elastography Displacement Estimation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1181-1190.	1.7	10
2	Second-Order Ultrasound Elastography With $L_1$ -Norm Spatial Regularization. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1008-1019.	1.7	8
3	Robust Scatterer Number Density Segmentation of Ultrasound Images. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1169-1180.	1.7	6
4	Incorporating Gradient Similarity for Robust Time Delay Estimation in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1738-1750.	1.7	3
5	Investigating Shift Variance of Convolutional Neural Networks in Ultrasound Image Segmentation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1703-1713.	1.7	10
6	Deep reconstruction of high-quality ultrasound images from raw plane-wave data: A simulation and in vivo study. Ultrasonics, 2022, 125, 106778.	2.1	15
7	Fast Strain Estimation and Frame Selection in Ultrasound Elastography Using Machine Learning. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 406-415.	1.7	9
8	Pruning MobileNetV2 for Efficient Implementation of Minimum Variance Beamforming. Lecture Notes in Computer Science, 2021, , 211-219.	1.0	2
9	Deep Learning for Ultrasound Image Formation: CUBDL Evaluation Framework and Open Datasets. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 3466-3483.	1.7	45
10	Comparison of different attenuation compensation methods in the estimation of the ultrasound backscatter coefficient. AIP Conference Proceedings, 2021, , .	0.3	1
11	Multimodal 3D ultrasound and CT in image-guided spinal surgery: public database and new registration algorithms. International Journal of Computer Assisted Radiology and Surgery, 2021, 16, 555-565.	1.7	10
12	Fast and robust localization of surgical array using Kalman filter. International Journal of Computer Assisted Radiology and Surgery, 2021, 16, 829-837.	1.7	0
13	Analytical Globally-Regularized Estimation Of Effective Scatterer Diameter And Acoustic Concentration in Quantitative Ultrasound. , 2021, , .		1
14	Virtual Source Synthetic Aperture for Accurate Lateral Displacement Estimation in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1687-1695.	1.7	9
15	Analytic Global Regularized Backscatter Quantitative Ultrasound. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1605-1617.	1.7	18
16	Plane-Wave Ultrasound Beamforming Through Independent Component Analysis. Computer Methods and Programs in Biomedicine, 2021, 203, 106036.	2.6	4
17	Combining First- and Second-Order Continuity Constraints in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2407-2418.	1.7	15
18	Ultrasound Scatterer Density Classification Using Convolutional Neural Networks and Patch Statistics. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2697-2706.	1.7	10

#	ARTICLE	IF	CITATIONS
19	Robust Ultrasound-to-Ultrasound Registration for Intra-operative Brain Shift Correction with a Siamese Neural Network. Lecture Notes in Computer Science, 2021, , 85-95.	1.0	1
20	Automatic 3D Ultrasound Segmentation of Uterus Using Deep Learning. , 2021, , .		2
21	Explainable AI and susceptibility to adversarial attacks: a case study in classification of breast ultrasound images. , 2021, , .		3
22	Shift-Invariant Segmentation in Breast Ultrasound Images. , 2021, , .		4
23	Evaluation of MRI to Ultrasound Registration Methods for Brain Shift Correction: The CuRIOUS2018 Challenge. IEEE Transactions on Medical Imaging, 2020, 39, 777-786.	5.4	42
24	Low Rank and Sparse Decomposition of Ultrasound Color Flow Images for Suppressing Clutter in Real-Time. IEEE Transactions on Medical Imaging, 2020, 39, 1073-1084.	5.4	13
25	3D normalized cross-correlation for estimation of the displacement field in ultrasound elastography. Ultrasonics, 2020, 102, 106053.	2.1	25
26	Synthetic aperture with high lateral sampling frequency for ultrasound elastography. , 2020, 2020, 2071-2074.		0
27	Real-time and High Quality Ultrasound Elastography Using Convolutional Neural Network by Incorporating Analytic Signal. , 2020, 2020, 2075-2078.		6
28	Incorporating Multiple Observations in global Ultrasound Elastography. , 2020, 2020, 2007-2010.		6
29	A Tissue Mechanics Based Method to Improve Tissue Displacement Estimation in Ultrasound Elastography. , 2020, 2020, 2051-2054.		5
30	Regularized Estimation of Effective Scatterer Size and Acoustic Concentration Quantitative Ultrasound Parameters Using Dynamic Programming. , 2020, 2020, 13-16.		6
31	Automatic collateral circulation scoring in ischemic stroke using 4D CT angiography with low-rank and sparse matrix decomposition. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 1501-1511.	1.7	13
32	Ultrasonography of Lumbar Multifidus Muscle in University American Football Players. Medicine and Science in Sports and Exercise, 2020, 52, 1495-1501.	0.2	10
33	Fine-Tuning U-Net for Ultrasound Image Segmentation: Different Layers, Different Outcomes. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 2510-2518.	1.7	62
34	LUMINOUS database: lumbar multifidus muscle segmentation from ultrasound images. BMC Musculoskeletal Disorders, 2020, 21, 703.	0.8	7
35	Denosing RF Data via Robust Principal Component Analysis: Results in Ultrasound Elastography. , 2020, 2020, 2067-2070.		7
36	Segmentation of Ultrasound Images based on Scatterer Density using U-Net. , 2020, 2020, 2063-2066.		3

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37	Fast Multi-Focus Ultrasound Image Recovery Using Generative Adversarial Networks. IEEE Transactions on Computational Imaging, 2020, 6, 1272-1284.	2.6	19
38	Phase Aberration Correction: A Convolutional Neural Network Approach. IEEE Access, 2020, 8, 162252-162260.	2.6	18
39	A Pilot Study on Scatterer Density Classification of Ultrasound Images Using Deep Neural Networks. , 2020, 2020, 2059-2062.		2
40	Automatic Frame Selection using CNN in Ultrasound Elastography. , 2020, 2020, 2027-2030.		0
41	Clutter suppression in ultrasound: performance evaluation and review of low-rank and sparse matrix decomposition methods. BioMedical Engineering OnLine, 2020, 19, 37.	1.3	9
42	Breast Lesion Segmentation in Ultrasound Images with Limited Annotated Data. , 2020, , .		9
43	Improving 3D ultrasound prostate localisation in radiotherapy through increased automation of interfraction matching. Radiotherapy and Oncology, 2020, 149, 134-141.	0.3	2
44	Displacement Estimation in Ultrasound Elastography Using Pyramidal Convolutional Neural Network. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 2629-2639.	1.7	48
45	The effect of low back pain and lower limb injury on lumbar multifidus muscle morphology and function in university soccer players. BMC Musculoskeletal Disorders, 2020, 21, 96.	0.8	17
46	Two-stage ultrasound image segmentation using U-Net and test time augmentation. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 981-988.	1.7	69
47	Accurate and Precise Time-Delay Estimation for Ultrasound Elastography With Prebeamformed Channel Data. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 1752-1763.	1.7	6
48	Semi-supervised Training of Optical Flow Convolutional Neural Networks in Ultrasound Elastography. Lecture Notes in Computer Science, 2020, , 504-513.	1.0	10
49	Ultrasound Beamforming using MobileNetV2. , 2020, , .		12
50	Lumbar Multifidus Muscle Characteristics, Body Composition, and Injury in University Rugby Players. Journal of Athletic Training, 2020, 55, 1116-1123.	0.9	17
51	Angular Apodization Estimation Using Independent Component Analysis in Coherent Plane-Wave Compounding. , 2020, , .		0
52	Evaluation of Contrast to Noise Ratio of Parametric Images of Regularized Estimates of Quantitative Ultrasound. , 2020, , .		2
53	Adaptive Data Function for Robust Ultrasound Elastography. , 2020, , .		5
54	Multi-Focus Ultrasound Imaging Using Generative Adversarial Networks. , 2019, , .		11

#	ARTICLE	IF	CITATIONS
55	Ultrasound Elastography Utilizing Pre-Beam-Formed Data. , 2019, , .		3
56	L1 And L2 Norm Depth-Regularized Estimation Of The Acoustic Attenuation And Backscatter Coefficients Using Dynamic Programming. , 2019, , .		13
57	Combining Total Variation Regularization with Window-Based Time Delay Estimation in Ultrasound Elastography. IEEE Transactions on Medical Imaging, 2019, 38, 2744-2754.	5.4	35
58	Global Ultrasound Elastography in Spatial and Temporal Domains. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 876-887.	1.7	32
59	Ultrasonography of multifidus muscle morphology and function in ice hockey players with and without low back pain. Physical Therapy in Sport, 2019, 37, 77-85.	0.8	25
60	Fast Approximate Time-Delay Estimation in Ultrasound Elastography Using Principal Component Analysis. , 2019, 2019, 6204-6207.		4
61	18F-FACBC PET/MRI in Diagnostic Assessment and Neurosurgery of Gliomas. Clinical Nuclear Medicine, 2019, 44, 550-559.	0.7	23
62	Ultrasound segmentation using U-Net: learning from simulated data and testing on real data. , 2019, 2019, 6628-6631.		20
63	ARENA: Inter-modality affine registration using evolutionary strategy. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 441-450.	1.7	14
64	Analytical Minimization-Based Regularized Subpixel Shear-Wave Tracking for Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 285-296.	1.7	5
65	Assessment of Mechanical Properties of Tissue in Breast Cancer-Related Lymphedema Using Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 541-550.	1.7	20
66	Fine Tuning U-Net for Ultrasound Image Segmentation: Which Layers?. Lecture Notes in Computer Science, 2019, , 235-242.	1.0	12
67	Automatic Frame Selection Using MLP Neural Network in Ultrasound Elastography. Lecture Notes in Computer Science, 2019, , 462-472.	1.0	4
68	High-Dynamic-Range Ultrasound: Application for Imaging Tendon Pathology. Ultrasound in Medicine and Biology, 2018, 44, 1525-1532.	0.7	3
69	Assessment of Rigid Registration Quality Measures in Ultrasound-Guided Radiotherapy. IEEE Transactions on Medical Imaging, 2018, 37, 428-437.	5.4	8
70	Nonlinear deformation of tractography in ultrasound-guided low-grade gliomas resection. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 457-467.	1.7	11
71	Non-Local Super Resolution in Ultrasound Imaging. , 2018, , .		4
72	GLUENet: Ultrasound Elastography Using Convolutional Neural Network. Lecture Notes in Computer Science, 2018, , 21-28.	1.0	31

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73	Low Variance Estimation of Backscatter Quantitative Ultrasound Parameters Using Dynamic Programming. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 2042-2053.	1.7	44
74	Population-averaged MRI atlases for automated image processing and assessments of lumbar paraspinal muscles. European Spine Journal, 2018, 27, 2442-2448.	1.0	16
75	Ultrasound elastography of breast cancer-related lymphedema. , 2018, , .		4
76	Nonlocal Coherent Denoising of RF Data for Ultrasound Elastography. Journal of Healthcare Engineering, 2018, 2018, 1-9.	1.1	1
77	Direct strain estimation in ultrasound elastography using a novel dynamic programming approach. , 2018, , .		0
78	MARCEL (Inter-Modality Affine Registration with CorrELation Ratio): An Application for Brain Shift Correction in Ultrasound-Guided Brain Tumor Resection. Lecture Notes in Computer Science, 2018, , 55-63.	1.0	1
79	Supervised Classification of the Accuracy of the Time Delay Estimation in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 21-29.	1.7	1
80	REtroSpective Evaluation of Cerebral Tumors (RESECT): A clinical database of pre-operative MRI and intra-operative ultrasound in low-grade glioma surgeries. Medical Physics, 2017, 44, 3875-3882.	1.6	69
81	Estimation of Strain Elastography from Ultrasound Radio-Frequency Data by Utilizing Analytic Gradient of the Similarity Metric. IEEE Transactions on Medical Imaging, 2017, 36, 1347-1358.	5.4	14
82	Multimodal 18 F-Fluciclovine PET/MRI and Ultrasound-Guided Neurosurgery of an Anaplastic Oligodendroglioma. World Neurosurgery, 2017, 108, 989.e1-989.e8.	0.7	12
83	Towards Automatic Collateral Circulation Score Evaluation in Ischemic Stroke Using Image Decompositions and Support Vector Machines. Lecture Notes in Computer Science, 2017, , 158-167.	1.0	7
84	Ultrasound Elastography of the Prostate Using an Unconstrained Modulus Reconstruction Technique: A Pilot Clinical Study. Translational Oncology, 2017, 10, 744-751.	1.7	6
85	Global Time-Delay Estimation in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 1625-1636.	1.7	78
86	Regularized tracking of shear-wave in ultrasound elastography. , 2017, , .		3
87	Evaluation of an automated thresholding algorithm for the quantification of paraspinal muscle composition from MRI images. BioMedical Engineering OnLine, 2017, 16, 61.	1.3	36
88	Breast Ultrasound Elastography Using Full Inversion-Based Elastic Modulus Reconstruction. IEEE Transactions on Computational Imaging, 2017, 3, 774-782.	2.6	12
89	Automatic accuracy assessment of ultrasound elastography using correlation profile and prior information of displacement continuity. , 2017, , .		0
90	Cooperative receding horizon control of double integrator vehicles for multi-target interception. , 2016, , .		2

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91	A cooperative receding horizon controller for multi-target interception with Obstacle Avoidance. , 2016, , .		1
92	Registration of Pre- and Postresection Ultrasound Volumes With Noncorresponding Regions in Neurosurgery. IEEE Journal of Biomedical and Health Informatics, 2016, 20, 1240-1249.	3.9	23
93	Edge-preserving ultrasonic strain imaging with uniform precision. , 2015, 2015, 3835-8.		6
94	Robust deformable registration of pre- and post-resection ultrasound volumes for visualization of residual tumor in neurosurgery. , 2015, 2015, 141-4.		0
95	Cooperative control for multi-target interception with sensing and communication limitations: A game-theoretic approach. , 2015, , .		6
96	Temporal Hierarchical Adaptive Texture CRF for Automatic Detection of Gadolinium-Enhancing Multiple Sclerosis Lesions in Brain MRI. IEEE Transactions on Medical Imaging, 2015, 34, 1227-1241.	5.4	17
97	Near Real-Time Robust Non-rigid Registration of Volumetric Ultrasound Images for Neurosurgery. Ultrasound in Medicine and Biology, 2015, 41, 574-587.	0.7	29
98	Deformable registration of preoperative MR, pre-resection ultrasound, and post-resection ultrasound images of neurosurgery. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 1017-1028.	1.7	31
99	Classification of kidney and liver tissue using ultrasound backscatter data. , 2015, , .		2
100	Automatic Deformable MR-Ultrasound Registration for Image-Guided Neurosurgery. IEEE Transactions on Medical Imaging, 2015, 34, 366-380.	5.4	70
101	Ultrasound elastography using multiple images. Medical Image Analysis, 2014, 18, 314-329.	7.0	45
102	Self-similarity weighted mutual information: A new nonrigid image registration metric. Medical Image Analysis, 2014, 18, 343-358.	7.0	86
103	Nonrigid Registration of Ultrasound and MRI Using Contextual Conditioned Mutual Information. IEEE Transactions on Medical Imaging, 2014, 33, 708-725.	5.4	48
104	Real-Time Regularized Ultrasound Elastography. IEEE Transactions on Medical Imaging, 2011, 30, 928-945.	5.4	150
105	Intra-operative ultrasound elasticity imaging for monitoring of hepatic tumour thermal ablation. Hpb, 2010, 12, 717-723.	0.1	42
106	Tracked Regularized Ultrasound Elastography for Targeting Breast Radiotherapy. Lecture Notes in Computer Science, 2009, 12, 507-515.	1.0	14
107	Ablation monitoring with a regularized 3D elastography technique. , 2008, , .		4
108	Ultrasound Elastography: A Dynamic Programming Approach. IEEE Transactions on Medical Imaging, 2008, 27, 1373-1377.	5.4	130

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109	Ablation Monitoring with Elastography: 2D In-vivo and 3D Ex-vivo Studies. Lecture Notes in Computer Science, 2008, 11, 458-466.	1.0	39
110	9C-1 Beam Steering Approach for Speckle Characterization and Out-of-Plane Motion Estimation in Real Tissue. Proceedings IEEE Ultrasonics Symposium, 2007, , .	0.0	16
111	P3E-9 Ultrasound Speckle Detection Using Low Order Moments. , 2006, , .		18