Akira Hirose

List of Publications by Year
in descending order

141 papers	3,131 citations	257101 24 h-index	174990 52 g-index
142 all docs	142 docs citations	142 times ranked	2105 citing authors

#	Article	IF	Citations
1	Recent advances in physical reservoir computing: A review. Neural Networks, 2019, 115, 100-123.	3.3	951
2	Complex-Valued Neural Networks. Studies in Computational Intelligence, 2012, , .	0.7	280
3	Generalization Characteristics of Complex-Valued Feedforward Neural Networks in Relation to Signal Coherence. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 541-551.	7.2	216
4	Reservoir Computing With Spin Waves Excited in a Garnet Film. IEEE Access, 2018, 6, 4462-4469.	2.6	135
5	Quaternion Neural-Network-Based PolSAR Land Classification in Poincare-Sphere-Parameter Space. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 5693-5703.	2.7	124
6	Fading Channel Prediction Based on Combination of Complex-Valued Neural Networks and Chirp Z-Transform. IEEE Transactions on Neural Networks and Learning Systems, 2014, 25, 1686-1695.	7.2	78
7	Singularity-Spreading Phase Unwrapping. IEEE Transactions on Geoscience and Remote Sensing, 2007, 45, 3240-3251.	2.7	61
8	Plastic mine detecting radar system using complex-valued self-organizing map that deals with multiple-frequency interferometric images. Neural Networks, 2004, 17, 1201-1210.	3.3	59
9	Applications of complex-valued neural networks to coherent optical computing using phase-sensitive detection scheme. Information Sciences, 1994, 2, 103-117.	0.3	56
10	Singular Unit Restoration in Interferograms Based on Complex-Valued Markov Random Field Model for Phase Unwrapping. IEEE Geoscience and Remote Sensing Letters, 2009, 6, 18-22.	1.4	53
11	Unsupervised Fine Land Classification Using Quaternion Autoencoder-Based Polarization Feature Extraction and Self-Organizing Mapping. IEEE Transactions on Geoscience and Remote Sensing, 2018, 56, 1839-1851.	2.7	44
12	Walled LTSA Array for Rapid, High Spatial Resolution, and Phase-Sensitive Imaging to Visualize Plastic Landmines. IEEE Transactions on Geoscience and Remote Sensing, 2007, 45, 2536-2543.	2.7	43
13	Averaged Stokes Vector Based Polarimetric SAR Data Interpretation. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 4536-4547.	2.7	38
14	Improvement of Plastic Landmine Visualization Performance by Use of Ring-CSOM and Frequency-Domain Local Correlation. IEICE Transactions on Electronics, 2009, E92-C, 102-108.	0.3	36
15	Land Form Classification and Similar Land-Shape Discovery by Using Complex-Valued Convolutional Neural Networks. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 7907-7917.	2.7	36
16	Ultrawideband Direction-of-Arrival Estimation Using Complex-Valued Spatiotemporal Neural Networks. IEEE Transactions on Neural Networks and Learning Systems, 2014, 25, 1727-1732.	7.2	35
17	Complex-valued neural networks: The merits and their origins. , 2009, , .		33
18	Compact Folded-Fin Tapered Slot Antenna for UWB Applications. IEEE Antennas and Wireless Propagation Letters, 2015, 14, 1192-1195.	2.4	32

#	Article	IF	Citations
19	Coherent optical neural network that learns desirable phase values in the frequency domain by use of multiple optical-path differences. Optics Letters, 2003, 28, 2524.	1.7	31
20	Nature of complex number and complex-valued neural networks. Frontiers of Electrical and Electronic Engineering in China: Selected Publications From Chinese Universities, 2011, 6, 171-180.	0.6	29
21	InSAR Local Co-Registration Method Assisted by Shape-From-Shading. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2013, 6, 953-959.	2.3	26
22	Spin waves propagating through a stripe magnetic domain structure and their applications to reservoir computing. Physical Review Research, 2021, 3, .	1.3	26
23	Isotropization of Quaternion-Neural-Network-Based PolSAR Adaptive Land Classification in Poincare-Sphere Parameter Space. IEEE Geoscience and Remote Sensing Letters, 2018, 15, 1234-1238.	1.4	25
24	Multiple-Mode Selection of Walled-LTSA Array Elements for High-Resolution Imaging to Visualize Antipersonnel Plastic Landmines. IEEE Geoscience and Remote Sensing Letters, 2008, 5, 745-749.	1.4	24
25	An Active Metamaterial Antenna With MEMS-Modulated Scanning Radiation Beams. IEEE Electron Device Letters, 2016, 37, 920-923.	2.2	24
26	Millimeter-Wave Adaptive Glucose Concentration Estimation With Complex-Valued Neural Networks. IEEE Transactions on Biomedical Engineering, 2019, 66, 2065-2071.	2.5	24
27	SPEC Method—A Fine Coregistration Method for SAR Interferometry. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 28-37.	2.7	22
28	Spatially Arranged Sparse Recurrent Neural Networks for Energy Efficient Associative Memory. IEEE Transactions on Neural Networks and Learning Systems, 2020, 31, 24-38.	7.2	21
29	Circular property of complex-valued correlation learning in CMRF-based filtering for synthetic aperture radar interferometry. Neurocomputing, 2014, 134, 165-172.	3.5	18
30	Millimeter-wave security imaging using complex-valued self-organizing map for visualization of moving targets. Neurocomputing, 2014, 134, 247-253.	3.5	18
31	Adaptive land classification and new class generation by unsupervised double-stage learning in Poincare sphere space for polarimetric synthetic aperture radars. Neurocomputing, 2017, 248, 3-10.	3.5	16
32	Phasor Quaternion Neural Networks for Singular Point Compensation in Polarimetric-Interferometric Synthetic Aperture Radar. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 2510-2519.	2.7	16
33	A Numerical Exploration of Signal Detector Arrangement in a Spin-Wave Reservoir Computing Device. IEEE Access, 2021, 9, 72637-72646.	2.6	16
34	Performance Dependence on System Parameters in Millimeter-Wave Active Imaging Based on Complex-Valued Neural Networks to Classify Complex Texture. IEEE Access, 2017, 5, 22927-22939.	2.6	15
35	Frequency-multiplexed logic circuit based on a coherent optical neural network. Applied Optics, 2005, 44, 4053.	2.1	14
36	Developmental Learning With Behavioral Mode Tuning by Carrier-Frequency Modulation in Coherent Neural Networks. IEEE Transactions on Neural Networks, 2006, 17, 1532-1543.	4.8	14

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37	Unsupervised Hierarchical Land Classification Using Self-Organizing Feature Codebook for Decimeter-Resolution PolSAR. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 1894-1905.	2.7	14
38	Complex-valued self-organizing map clustering using complex inner product in active millimeter-wave imaging. , 2010, , .		13
39	PolSAR Wet Snow Mapping With Incidence Angle Information. IEEE Geoscience and Remote Sensing Letters, 2016, 13, 2029-2033.	1.4	13
40	Pixel-by-Pixel Scattering Mechanism Vector Optimization in High-Resolution PolInSAR. IEEE Transactions on Geoscience and Remote Sensing, 2018, 56, 2587-2596.	2.7	13
41	Anisotropic Phase Unwrapping for Synthetic Aperture Radar Interferometry. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 4116-4126.	2.7	12
42	Efficient generation of holographic movies with frame interpolation using a coherent neural network. IEICE Electronics Express, 2006, 3, 417-423.	0.3	11
43	High-Sensitivity Millimeter-Wave Imaging Front-End Using a Low-Impedance Tapered Slot Antenna. IEEE Transactions on Antennas and Propagation, 2011, 59, 4868-4872.	3.1	11
44	Use of Poincare sphere parameters for fast supervised PolSAR land classification. , 2013, , .		11
45	Distortion Reduction in Singularity-Spreading Phase Unwrapping With Pseudo-Continuous Spreading and Self-Clustering Active Localization. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 3846-3858.	2.3	11
46	Degree of Polarization-Based Data Filter for Fully Polarimetric Synthetic Aperture Radar. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 3767-3777.	2.7	11
47	Taper-Walled Linearly Tapered Slot Antenna. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2011, 4, 779-784.	2.3	10
48	Relationship between phase and amplitude generalization errors in complex- and real-valued feedforward neural networks. Neural Computing and Applications, 2013, 22, 1357-1366.	3.2	10
49	Local Subpixel Coregistration of Interferometric Synthetic Aperture Radar Images Based on Fractal Models. IEEE Transactions on Geoscience and Remote Sensing, 2013, 51, 4292-4301.	2.7	10
50	InSAR Image Regularization and DEM Error Correction With Fractal Surface Scattering Model. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 1427-1439.	2.7	10
51	Narrowband Interference Mitigation in UWB Systems Utilizing Frequency Dependence of Null Formation in Array Antennas. IEEE Access, 2016, 4, 8715-8720.	2.6	10
52	Codebook-Based Hierarchical Polarization Feature for Unsupervised Fine Land Classification Using High-Resolution PolSAR Data. , 2018, , .		10
53	Polarization Feature Extraction Using Quaternion Neural Networks for Flexible Unsupervised Polsar Land Classification. , 2018, , .		10
54	Foreword to the Special Issue on Advances in SAR and Radar Technology. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 3748-3750.	2.3	9

#	ARTICLE	IF	CITATIONS
55	Proposal of adaptive land classification using quaternion neural network with isotropic activation function. , 2016, , .		9
56	Singular Unit Restoration in InSAR Using Complex-Valued Neural Networks in the Spectral Domain. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1717-1723.	2.7	9
57	Complex-valued Neural Networks. IEEJ Transactions on Electronics, Information and Systems, 2011, 131, 2-8.	0.1	9
58	Glacier surface velocity estimation using stokes vector correlation. , 2015, , .		8
59	Wideband and Low Direct-Coupling Tapered Slot Antenna Using Electromagnetic Bandgap Structures. IEEE Transactions on Antennas and Propagation, 2019, 67, 2272-2279.	3.1	8
60	Online Regularization of Complex-Valued Neural Networks for Structure Optimization in Wireless-Communication Channel Prediction. IEEE Access, 2020, 8, 143706-143722.	2.6	8
61	Proposal of wet snowmapping with focus on incident angle influential to depolarization of surface scattering. , 2016, , .		7
62	Structurization of synthetic aperture radar information by using neural networks. , 2017, , .		7
63	Complex-Valued Reservoir Computing for Interferometric SAR Applications With Low Computational Cost and High Resolution. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 7981-7993.	2.3	7
64	Ultrasonic Imaging for Boundary Shape Generation by Phase Unwrapping with Singular-Point Elimination Based on Complex-Valued Markov Random Field Model. IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, 2010, E93-A, 219-226.	0.2	7
65	Performance Analysis of Steepest Descent-Based Feedback Control of Tunable-Dispersion Compensator for Adaptive Dispersion Compensation in All-Optical Dynamic-Routing Networks. Journal of Lightwave Technology, 2007, 25, 1086-1094.	2.7	6
66	Numerical reconstruction of holographic microscopy images based on matching pursuits on a pair of domains. , 2010, , .		6
67	PHase property in complex-correlation and real-imaginary-correlation filtered SAR interferograms and its influence on DEM quality. , 2013, , .		6
68	Direction-of-Arrival Estimation of Ultra-Wideband Signals in Narrowband Interference Environment Based on Power Inversion and Complex-Valued Neural Networks. Neural Processing Letters, 2018, 47, 921-933.	2.0	6
69	Proposal of Millimeter-Wave Adaptive Glucose-Concentration Estimation System Using Complex-Valued Neural Networks. , 2018, , .		6
70	Proposal of Complex-Valued Convolutional Neural Networks for Similar Land-Shape Discovery in Interferometric Synthetic Aperture Radar. Lecture Notes in Computer Science, 2018, , 340-349.	1.0	6
71	Keynote Speech: Information processing hardware, physical reservoir computing and complex-valued neural networks. , 2019, , .		6
72	Consideration on Singular-Point Generating Mechanisms by Analyzing the Effect of Phase-and-Polarization Optimization in PolInSAR. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 1625-1638.	2.3	6

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73	Proposal of polarization state prediction using quaternion neural networks for fading channel prediction in mobile communications. , 2016, , .		5
74	Experimental Analysis on the Mechanisms of Singular Point Generation in InSAR by Employing Scaled Optical Interferometry. IEEE Transactions on Geoscience and Remote Sensing, 2018, 56, 3830-3837.	2.7	5
75	Development of Complex-Valued Self-Organizing-Map Landmine Visualization System Equipped with Moving One-Dimensional Array Antenna. IEICE Transactions on Electronics, 2018, E101.C, 35-38.	0.3	5
76	A Radar System with Phase-Sensitive Millimetric Wave Circuitry and Complex-Amplitude Neural Processing. Perspectives in Neural Computing, 1998, , 707-712.	0.1	5
77	Complex-Valued Neural Networks: An Introduction. , 2003, , 1-6.		4
78	Considerations on C/T matrix-based polsar land classification and explorations on stokes vector-based method. , 2014, , .		4
79	Experimental analysis of singular point generation mechanisms in interferometric SAR using optics: The possibility of singular point generation by interference in a single pixel. , 2015, , .		4
80	Adaptive Subsurface 3-D Imaging Based on Peak Phase-Retrieval and Complex-Valued Self-Organizing Map. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 52-56.	1.4	4
81	Millimeter-Wave Coherent Imaging of Moving Targets by Using Complex-Valued Self-Organizing Map and Auto-Encoder. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 1784-1797.	2.3	4
82	Phasor-Quaternion Self-Organizing-Map-Based Ground Penetrating Radar Systems. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-11.	2.7	4
83	Proposal of bulk LTSA to realize low antenna impedance for real time millimeter wave imaging front-end. , 2009, , .		3
84	Proposal of Singular-Unit Compensation in Polarimetric-Interferometric Synthetic Aperture Radar by Phasor-Quaternion Neural Networks. , 2018, , .		3
85	L-Band SAR Interferometric Analysis for Flood Detection in Urban Area - a Case Study in 2015 Joso Flood, Japan. , 2018, , .		3
86	Proposal of Adaptive Search-and-Rescue Radar System with online Complex-Valued Frequency-Domain Independent Component Analysis. , 2019, , .		3
87	Recent Progress in Adaptive Sar Data Structurization in Complex and Hypercomplex Domain. , 2019, , .		3
88	Proposal Of Three-Port Dielectric Waveguide Probes For Human Blood Glucose Monitoring. , 2019, , .		3
89	Application Identification of Network Traffic by Reservoir Computing. Communications in Computer and Information Science, 2019, , 389-396.	0.4	3
90	Full-Learning Rotational Quaternion Convolutional Neural Networks and Confluence of Differently Represented Data for PolSAR Land Classification. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2022, 15, 2914-2928.	2.3	3

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91	Polarization-Aware Prediction of Mobile Radio Wave Propagation Based on Complex-Valued and Quaternion Neural Networks. IEEE Access, 2022, 10, 66589-66600.	2.6	3
92	Optimal Control of Tunable PMD Compensator Using Random Step Size Hill-Climbing Method. , 2008, , .		2
93	Spectral Fluctuation Method: A Texture-Based Method to Extract Text Regions in General Scene Images. IEICE Transactions on Information and Systems, 2009, E92-D, 1702-1715.	0.4	2
94	Electric-field resonance coupling between human and transmitter for human position estimation system. , 2010, , .		2
95	Synthesis of two-dimensional fractional brownian motion via circulant embedding. , 2011, , .		2
96	Landmine visualization system based on multiple complex-valued SOMs to integrate multimodal information. , 2012, , .		2
97	Propeller-Shaped Antenna: A Steerable Ultrawideband Planar Antenna. IEEE Antennas and Wireless Propagation Letters, 2014, 13, 1140-1143.	2.4	2
98	Performance of entire-spectrum-processing complex-valued neural-network filter to generate digital elevation model in interferometric radar. , 2018, , .		2
99	In a Spin-Wave Reservoir for Machine Learning. , 2019, , .		2
100	Enhancement of Polarization Mechanism in Pixel-By-Pixel Phase Optimization in Polinsar. , 2019, , .		2
101	Data Arrangement With Rotation Transformation for Fully Polarimetric Synthetic Aperture Radar. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 436-440.	1.4	2
102	Spatial distribution of information effective for logic function learning in spin-wave reservoir computing chip utilizing spatiotemporal physical dynamics. , 2020, , .		2
103	2.65Gbps Downlink Communications with Polarization Multiplexing in X-Band for Small Earth Observation Satellite. IEICE Transactions on Communications, 2021, E104.B, 1-12.	0.4	2
104	Proposal of Complex-Valued Reservoir Computing for Topographic Aspect Classification. , 2021, , .		2
105	Self-Organization through Spike-Timing Dependent Plasticity Using localized Synfire-Chain Patterns. Neural Processing Letters, 2006, 25, 79-89.	2.0	1
106	High-resolution walled-LTSA-array ground penetrating radar system using adaptive complex-valued self-organizing-map processing. , 2007, , .		1
107	UWB measurement, complex-amplitude texture, and Walled-LTSA array in plastic landmine visualization. , 2007, , .		1
108	Steepest-descent-based control of polarization controller for high-speed tracking in adaptive polarization mode dispersion compensation. , 2008, , .		1

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109	Search Control Algorithm Based on Random Step Size Hill-Climbing Method for Adaptive PMD Compensation. IEICE Transactions on Communications, 2009, E92.B, 2584-2590.	0.4	1
110	Human body position estimation system using electric field resonance coupling. , 2010, , .		1
111	Taper-walled linearly tapered slot antenna: A low direct-coupling antenna for subsurface imaging. , 2010, , .		1
112	Local co-registration for distortion reduction in SAR interferogram using amplitude information - combination of SPEC method and shape-from-shading -. , 2011, , .		1
113	APSAR 2013 Tsukuba, Japan - Report [Conference Report]. IEEE Geoscience and Remote Sensing Magazine, 2014, 2, 83-85.	4.9	1
114	All Japan Chapter: Activities and Prospects [Chapters]. IEEE Geoscience and Remote Sensing Magazine, 2014, 2, 42-45.	4.9	1
115	Use of coordinate rotation angle for improving man-made target detection performance. , 2017, , .		1
116	Complex-Valued and Quaternion Neural Networks to Deal with Complex Amplitude and Polarization: Their Strength in Electronics. , 2018, , .		1
117	A Metamaterial Antenna with Programmable Spatial and Transient Radiation Beams by Using Monolithically Integrated RF-MEMS Switches. IEEJ Transactions on Sensors and Micromachines, 2018, 138, 106-111.	0.0	1
118	Profiles of RFI in Alos-2 Images - A Case Study in Tokyo Bay, Japan. , 2018, , .		1
119	Big SAR data processing: Interferometric and polarimetric SAR data structurization based on complex-valued and quaternion neural networks. , 2019, , .		1
120	Target Clustering in Three-Dimensional Ground Penetrating Radar Based on Time-Domain Phase Information and Complex-Valued Self-Organizing Map. , 2019, , .		1
121	Proposal of a Ground Penetrating Radar System Utilizing Polarization Information by Using Phasor-Quaternion Self-Organizing Map. , 2021, , .		1
122	Complex-Valued Convolutional Neural Networks in Interferometric Synthetic Aperture Radar and Their Teacher-Image Pollution Influence on the Performance. , 2020, , .		1
123	Model-Based Homogeneity to Extend Compressed Sensing for Ground Penetrating Radar. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-10.	2.7	1
124	Singular Unit Restoration Based on Complex-Valued Markov Random Field Model for Insar Interferograms. , 2008, , .		0
125	An adaptive ground penetrating radar imaging system based on complex-valued self-organizing map - recent progress and experiments in Cambodia -. , 2008, , .		0
126	Performance improvement plastic landmine visualization system by employing local correlation method. , 2008, , .		0

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127	Improvement of BER performance by active PMD compensation employing the steepest descent-based tracking algorithm. , 2009, , .		0
128	Local, nonlinear adaptive co-registration of master and slave interferometric SAR complex image data for high quality digital elevation map generation. , 2009, , .		0
129	Improvement of ALOS interferogram quality by use of the local co-registration method using singular-point and amplitude information. , 2012, , .		0
130	Ultra-short-pulse acoustic imaging using complex-valued spatio-temporal neural-network for null-steering: Experimental results. , 2014, , .		0
131	Changes of dominant scatterers and propagation paths as a possible origin of singular points in radar interferometry: Experimental analysis. , 2014, , .		0
132	Proposal of singular-point-removing filters with strong nonlinearity in spectral domain. , 2016, , .		0
133	T-Shaped Probe Waveguide Antenna: A Wideband Reconfigurable Circular-Polarized Single-Port Antenna. IEICE Transactions on Electronics, 2017, E100.C, 490-495.	0.3	0
134	Singularity-spreading phase unwrapping: Its basic idea and the influence of time and space discreteness on the dynamics. , 2018, , .		0
135	Big SAR data processing: Topographic and vegetation/land-use discovery for SAR data structurization. , 2019, , .		0
136	Dependence of Polarimetric Characteristics on Sar Resolutions: Experimental Analysis. , 2019, , .		0
137	SRAM: A Septum-type polarizer design method based on superposed even- and odd-mode excitation analysis. IEICE Transactions on Electronics, 2021, , .	0.3	0
138	Reduction of Polarization-State Spread in Phase-Distortion Mitigation by Phasor-Quaternion Neural Networks in PolInSAR. Communications in Computer and Information Science, 2020, , 526-534.	0.4	0
139	Foreword to the Special Issue on the 2019 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2019). IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 6512-6514.	2.3	0
140	Phasor Quaternion Neural Network Framework and Its Significance in Big SAR Intelligence. , 2021, , .		0
141	Spatial resolution of complex-valued reservoir computing in aspect classification using InSAR data. , 2021, , .		0