Pavel Lyakhov

List of Publications by Year
in descending order

60	767	759233	552781
papers	citations	12	26
		h-index	g-index

66	66	66	466
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Application of the residue number system to reduce hardware costs of the convolutional neural network implementation. Mathematics and Computers in Simulation, 2020, 177, 232-243.	4.4	309
2	Residue-to-binary conversion for general moduli sets based on approximate Chinese remainder theorem. International Journal of Computer Mathematics, 2017, 94, 1833-1849.	1.8	40
3	An Approximate Method for Comparing Modular Numbers and its Application to the Division of Numbers in Residue Number Systems*. Cybernetics and Systems Analysis, 2014, 50, 977-984.	0.7	33
4	Analysis of the Quantization Noise in Discrete Wavelet Transform Filters for 3D Medical Imaging. Applied Sciences (Switzerland), 2020, 10, 1223.	2.5	28
5	Analysis of the Quantization Noise in Discrete Wavelet Transform Filters for Image Processing. Electronics (Switzerland), 2018, 7, 135.	3.1	27
6	Digital filtering of images in a residue number system using finite-field wavelets. Automatic Control and Computer Sciences, 2014, 48, 180-189.	0.8	21
7	An efficient method of error correction in fault-tolerant modular neurocomputers. Neurocomputing, 2016, 205, 32-44.	5.9	21
8	The architecture of a fault-tolerant modular neurocomputer based on modular number projections. Neurocomputing, 2018, 272, 96-107.	5.9	18
9	Increasing of convolutional neural network performance using residue number system. , 2017, , .		17
10	Two methods of adaptive median filtering of impulse noise in images. Computer Optics, 2018, 42, 667-678.	2.2	17
11	High-Performance Digital Filtering on Truncated Multiply-Accumulate Units in the Residue Number System. IEEE Access, 2020, 8, 209181-209190.	4.2	14
12	Design and Implementation of Novel Efficient Full Adder/Subtractor Circuits Based on Quantum-Dot Cellular Automata Technology. Applied Sciences (Switzerland), 2021, 11, 8717.	2.5	14
13	Residue Number System-Based Solution for Reducing the Hardware Cost of a Convolutional Neural Network. Neurocomputing, 2020, 407, 439-453.	5.9	13
14	A High-Speed Division Algorithm for Modular Numbers Based on the Chinese Remainder Theorem with Fractions and Its Hardware Implementation. Electronics (Switzerland), 2019, 8, 261.	3.1	12
15	Construction of Residue Number System Using Hardware Efficient Diagonal Function. Electronics (Switzerland), 2019, 8, 694.	3.1	11
16	A New Method for Adaptive Median Filtering of Images. , 2019, , .		11
17	System for Neural Network Determination of Atrial Fibrillation on ECG Signals with Wavelet-Based Preprocessing. Applied Sciences (Switzerland), 2021, 11, 7213.	2.5	10
18	Efficient implementation of modular multiplication by constants applied to RNS reverse converters. , 2017, , .		9

#	Article	IF	Citations
19	Classification of Moduli Sets for Residue Number System With Special Diagonal Functions. IEEE Access, 2020, 8, 156104-156116.	4.2	8
20	A Method of Increasing Digital Filter Performance Based on Truncated Multiply-Accumulate Units. Applied Sciences (Switzerland), 2020, 10, 9052.	2.5	8
21	Design and Implementation of New Coplanar FA Circuits without NOT Gate and Based on Quantum-Dot Cellular Automata Technology. Applied Sciences (Switzerland), 2021, 11, 12157.	2.5	8
22	Quantization Noise of Multilevel Discrete Wavelet Transform Filters in Image Processing. Optoelectronics, Instrumentation and Data Processing, 2018, 54, 608-616.	0.6	7
23	Area-Efficient FPGA Implementation of Minimalistic Convolutional Neural Network Using Residue Number System. , 2018, , .		7
24	System for the Recognizing of Pigmented Skin Lesions with Fusion and Analysis of Heterogeneous Data Based on a Multimodal Neural Network. Cancers, 2022, 14, 1819.	3.7	7
25	A new model to optimize the architecture of a fault-tolerant modular neurocomputer. Neurocomputing, 2018, 303, 37-46.	5.9	6
26	RNS-Based Image Processing. , 2017, , 217-245.		5
27	High-Performance Hardware 3D Medical Imaging using Wavelets in the Residue Number System. , 2020, , .		5
28	Low-Bit Hardware Implementation of DWT for 3D Medical Images Processing. , 2020, , .		5
29	Digital Filter Architecture With Calculations in the Residue Number System by Winograd Method F (2) Tj ETQq1 1 0.784314 rgBT /Ov	4.2	5
30	RNS-Based FPGA Accelerators for High-Quality 3D Medical Image Wavelet Processing Using Scaled Filter Coefficients. IEEE Access, 2022, 10, 19215-19231.	4.2	5
31	Comparison of modular numbers based on the chinese remainder theorem with fractional values. Automatic Control and Computer Sciences, 2015, 49, 354-365.	0.8	4
32	High-speed smoothing filter in the Residue Number System. , 2016, , .		4
33	Efficiency analysis of the image impulse noise cleaning using median filters with weighted central element. , 2017, , .		4
34	Estimates of Mild Solutions of Navier–Stokes Equations in Weak Herz-Type Besov–Morrey Spaces. Mathematics, 2022, 10, 680.	2.2	4
35	On the Computational Complexity of 2D Filtering by Winograd Method. , 2022, , .		4
36	Hardware Implementation of Video Processing Device using Residue Number System. , 2019, , .		3

#	Article	IF	Citations
37	Implementation of Smoothing Image Filtering in the Residue Number System. , 2019, , .		3
38	Analysis of the Quantization Noise of Linear Time-Invariant Filters for Image Processing. , 2019, , .		3
39	Method of Oriented Contour Detection on Image Using Lorentz Function. , 2020, , .		3
40	3D-generalization of impulse noise removal method for video data processing. Computer Optics, 2020, 44, .	2.2	3
41	Improving Calculation Accuracy of Digital Filters Based on Finite Field Algebra. Applied Sciences (Switzerland), 2020, 10, 45.	2.5	3
42	Effect of RNS dynamic range on grayscale images filtering. , 2016, , .		2
43	Efficient RNS Reverse Converters for Moduli Sets with Dynamic Ranges Up to $$(10n+1)$$ (10 n + 1) -bit. Circuits, Systems, and Signal Processing, 2018, 37, 5178-5196.	2.0	2
44	A Division Algorithm in a Redundant Residue Number System Using Fractions. Applied Sciences (Switzerland), 2020, 10, 695.	2.5	2
45	Design Reverse Converter for Balanced RNS with Three Low-cost Modules. , 2021, , .		2
46	Accelerating Extreme Search Based on Natural Gradient Descent with Beta Distribution. , 2021, , .		2
47	On the Algorithmic Complexity of Digital Image Processing Filters with Winograd Calculations. Lecture Notes in Networks and Systems, 2022, , 71-89.	0.7	2
48	Improving Extreme Search withÂNatural Gradient Descent Using Dirichlet Distribution. Lecture Notes in Networks and Systems, 2022, , 19-28.	0.7	2
49	FIR Filters in Two-Stage Residue Number System. , 2014, , .		1
50	Effect of RNS moduli set selection on digital filter performance for satellite communications. , 2015, , .		1
51	On RNS with VLSI-friendly diagonal function. , 2017, , .		1
52	Designing forward converters for data transmission systems in two-level RNS. Journal of Physics: Conference Series, 2019, 1352, 012005.	0.4	1
53	A New Method of Cleaning Video from Impulse Noise. , 2019, , .		1
54	Method for Determining Skin Lesions from Images Using Neural Network. , 2020, , .		1

#	Article	IF	Citations
55	Designing reverse converter for data transmission systems from two-level RNS to BNS. Journal of Physics: Conference Series, 2020, 1658, 012005.	0.4	1
56	Bilateral and Median Filter Combination for High-Quality Cleaning of Random Impulse Noise in Images. , 2022, , .		1
57	High-Quality 3D Medical Imaging by Wavelet Filters with Reduced Coefficients Bit-Width. , 2019, , .		0
58	EEG Neuro - processing for the development of neurointerfaces. IOP Conference Series: Materials Science and Engineering, 2020, 873, 012003.	0.6	0
59	HARDWARE IMPLEMENTATION OF VIDEO PROCESSING DEVICE USING RESIDUE NUMBER SYSTEM. SovremennaÃ¢ Nauka I Innovacii, 2021, , 15-21.	0.0	0
60	Removal of Ocular Artifacts from the Electroencephalogram Signal Flow using Median Filtering. , 2021, , .		0