Mohsen Imani

List of Publications by Year
in descending order

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78 papers	2,149 citations	840776 11 h-index	839539 18 g-index
79 all docs	79 docs citations	79 times ranked	794 citing authors

#	Article	IF	Citations
1	Locality-Based Encoder and Model Quantization for Efficient Hyper-Dimensional Computing. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 897-907.	2.7	1
2	Computing-In-Memory Using Ferroelectrics: From Single- to Multi-Input Logic. IEEE Design and Test, 2022, 39, 56-64.	1.2	5
3	PAM: A Piecewise-Linearly-Approximated Floating-Point Multiplier With Unbiasedness and Configurability. IEEE Transactions on Computers, 2022, 71, 2473-2486.	3.4	12
4	GrapHD: Graph-Based Hyperdimensional Memorization for Brain-Like Cognitive Learning. Frontiers in Neuroscience, 2022, 16, 757125.	2.8	15
5	COSMO: Computing with Stochastic Numbers in Memory. ACM Journal on Emerging Technologies in Computing Systems, 2022, 18, 1-25.	2.3	1
6	OnlineHD: Robust, Efficient, and Single-Pass Online Learning Using Hyperdimensional System. , 2021, , .		22
7	HyDREA: Towards More Robust and Efficient Machine Learning Systems with Hyperdimensional Computing. , 2021, , .		9
8	A Framework for Efficient and Binary Clustering in High-Dimensional Space. , 2021, , .		5
9	Revisiting HyperDimensional Learning for FPGA and Low-Power Architectures. , 2021, , .		31
10	ManiHD: Efficient Hyper-Dimensional Learning Using Manifold Trainable Encoder. , 2021, , .		8
11	MIMHD: Accurate and Efficient Hyperdimensional Inference Using Multi-Bit In-Memory Computing. , 2021, , .		17
12	Scalable edge-based hyperdimensional learning system with brain-like neural adaptation. , 2021, , .		33
13	PRID: Model Inversion Privacy Attacks in Hyperdimensional Learning Systems. , 2021, , .		7
14	StocHD: Stochastic Hyperdimensional System for Efficient and Robust Learning from Raw Data. , 2021, , .		14
15	RegHD: Robust and Efficient Regression in Hyper-Dimensional Learning System. , 2021, , .		5
16	Massively Parallel Big Data Classification on a Programmable Processing In-Memory Architecture. , 2021, , .		0
17	Runtime Efficiency-Accuracy Tradeoff Using Configurable Floating Point Multiplier. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 346-358.	2.7	15
18	Efficient Associative Search in Brain-Inspired Hyperdimensional Computing. IEEE Design and Test, 2020, 37, 28-35.	1.2	2

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19	QuantHD: A Quantization Framework for Hyperdimensional Computing. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 2268-2278.	2.7	39
20	SearcHD: A Memory-Centric Hyperdimensional Computing With Stochastic Training. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 2422-2433.	2.7	43
21	Data Reuse for Accelerated Approximate Warps. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 4623-4634.	2.7	3
22	Accelerating Hyperdimensional Computing on FPGAs by Exploiting Computational Reuse. IEEE Transactions on Computers, 2020, 69, 1159-1171.	3.4	26
23	Deep Learning Acceleration with Neuron-to-Memory Transformation. , 2020, , .		14
24	DUAL: Acceleration of Clustering Algorithms using Digital-based Processing In-Memory. , 2020, , .		51
25	Implementing binary neural networks in memory with approximate accumulation. , 2020, , .		1
26	Deep Learning Acceleration using Digital-Based Processing In-Memory. , 2020, , .		0
27	Prive-HD: Privacy-Preserved Hyperdimensional Computing. , 2020, , .		17
28	HDCluster: An Accurate Clustering Using Brain-Inspired High-Dimensional Computing. , 2019, , .		26
29	FloatPIM. , 2019, , .		141
30	A Binary Learning Framework for Hyperdimensional Computing. , 2019, , .		44
31	CADE: Configurable Approximate Divider for Energy Efficiency. , 2019, , .		16
32	A Framework for Collaborative Learning in Secure High-Dimensional Space. , 2019, , .		56
33	FACH. , 2019, , .		27
34	ApproxLP. , 2019, , .		12
35	SparseHD: Algorithm-Hardware Co-optimization for Efficient High-Dimensional Computing. , 2019, , .		34
36	BRIC. , 2019, , .		40

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37	Hardware-Software Co-design to Accelerate Neural Network Applications. ACM Journal on Emerging Technologies in Computing Systems, 2019, 15, 1-18.	2.3	4
38	Exploring Processing In-Memory for Different Technologies. , 2019, , .		9
39	F5-HD. , 2019, , .		56
40	ALook. , 2019, , .		6
41	NNPIM: A Processing In-Memory Architecture for Neural Network Acceleration. IEEE Transactions on Computers, 2019, 68, 1325-1337.	3.4	38
42	FPGA Energy Efficiency by Leveraging Thermal Margin. , 2019, , .		10
43	Workload-Aware Opportunistic Energy Efficiency in Multi-FPGA Platforms. , 2019, , .		11
44	AdaptHD: Adaptive Efficient Training for Brain-Inspired Hyperdimensional Computing. , 2019, , .		23
45	SemiHD: Semi-Supervised Learning Using Hyperdimensional Computing. , 2019, , .		15
46	CompHD: Efficient Hyperdimensional Computing Using Model Compression. , 2019, , .		16
47	NVQuery: Efficient Query Processing in Nonvolatile Memory. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2019, 38, 628-639.	2.7	11
48	Resistive CAM Acceleration for Tunable Approximate Computing. IEEE Transactions on Emerging Topics in Computing, 2019, 7, 271-280.	4.6	23
49	Nvalt: Nonvolatile Approximate Lookup Table for GPU Acceleration. IEEE Embedded Systems Letters, 2018, 10, 14-17.	1.9	10
50	HDNA: Energy-efficient DNA sequencing using hyperdimensional computing. , 2018, , .		42
51	GenPIM: Generalized processing in-memory to accelerate data intensive applications. , 2018, , .		6
52	Approximate Computing Using Multiple-Access Single-Charge Associative Memory. IEEE Transactions on Emerging Topics in Computing, 2018, 6, 305-316.	4.6	42
53	Multi-Stage Tunable Approximate Search in Resistive Associative Memory. IEEE Transactions on Multi-Scale Computing Systems, 2018, 4, 17-29.	2.4	17
54	RNSnet: In-Memory Neural Network Acceleration Using Residue Number System. , 2018, , .		34

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55	FELIX. , 2018, , .		97
56	Hierarchical Hyperdimensional Computing for Energy Efficient Classification. , 2018, , .		8
57	Efficient human activity recognition using hyperdimensional computing. , 2018, , .		48
58	Program acceleration using nearest distance associative search. , 2018, , .		1
59	Deep neural network acceleration framework under hardware uncertainty. , 2018, , .		14
60	Hierarchical hyperdimensional computing for energy efficient classification. , 2018, , .		19
61	RMAC. , 2018, , .		29
62	MPIM: Multi-purpose in-memory processing using configurable resistive memory. , 2017, , .		49
63	Exploring Hyperdimensional Associative Memory. , 2017, , .		132
64	Ultra-Efficient Processing In-Memory for Data Intensive Applications. , 2017, , .		69
65	LookNN: Neural network with no multiplication. , 2017, , .		48
66	Low-Power Sparse Hyperdimensional Encoder for Language Recognition. IEEE Design and Test, 2017, 34, 94-101.	1.2	32
67	CFPU. , 2017, , .		65
68	Efficient neural network acceleration on GPGPU using content addressable memory. , 2017, , .		30
69	VoiceHD: Hyperdimensional Computing for Efficient Speech Recognition. , 2017, , .		104
70	NNgine: Ultra-Efficient Nearest Neighbor Accelerator Based on In-Memory Computing. , 2017, , .		5
71	Efficient query processing in crossbar memory. , 2017, , .		20
72	ORCHARD: Visual object recognition accelerator based on approximate in-memory processing. , 2017, , .		25

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73	A low-power hybrid magnetic cache architecture exploiting narrow-width values. , 2016, , .		15
74	ACAM. , 2016, , .		51
75	ReMAM: Low energy Resistive Multi-stage Associative Memory for energy efficient computing. , 2016, , .		25
76	Resistive Configurable Associative Memory for Approximate Computing. , 2016, , .		59
77	CAUSE: Critical application usage-aware memory system using non-volatile memory for mobile devices. , 2015, , .		20
78	Hierarchical design of robust and low data dependent FinFET based SRAM array. , 2015, , .		16