Viktor K Prasanna

List of Publications by Year
in descending order

210 papers	3,030 citations

393982

19 h-index	

377514

34 g-index

210 all docs	210 docs citations

210 times ranked	2064 citing authors

#	Article	IF	Citations
1	Energy-Balanced Task Allocation for Collaborative Processing in Wireless Sensor Networks. Mobile Networks and Applications, 2005, 10, 115-131.	2.2	137
2	Scalable Packet Classification on FPGA. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2012, 20, 1668-1680.	2.1	115
3	An Analysis of Security and Privacy Issues in Smart Grid Software Architectures on Clouds. , 2011, , .		84
4	High-Performance Designs for Linear Algebra Operations on Reconfigurable Hardware. IEEE Transactions on Computers, 2008, 57, 1057-1071.	2.4	68
5	Scalable and Modular Algorithms for Floating-Point Matrix Multiplication on Reconfigurable Computing Systems. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 433-448.	4.0	66
6	Energy Minimization for Real-Time Data Gathering in Wireless Sensor Networks. IEEE Transactions on Wireless Communications, 2006, 5, 3087-3096.	6.1	65
7	High-Performance Reduction Circuits Using Deeply Pipelined Operators on FPGAs. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 1377-1392.	4.0	65
8	Generative Adversarial Network for Synthetic Time Series Data Generation in Smart Grids. , 2018, , .		64
9	Building HVAC Scheduling Using Reinforcement Learning via Neural Network Based Model Approximation. , 2019, , .		62
10	HitGraph: High-throughput Graph Processing Framework on FPGA. IEEE Transactions on Parallel and Distributed Systems, 2019, 30, 2249-2264.	4.0	59
11	Accelerating Decision Tree Based Traffic Classification on FPGA and Multicore Platforms. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 3046-3059.	4.0	57
12	Fast and efficient implementation of Convolutional Neural Networks on FPGA. , 2017, , .		51
13	StrideBV: Single chip 400G+ packet classification. , 2012, , .		50
14	High-Throughput and Energy-Efficient Graph Processing on FPGA. , 2016, , .		50
15	Improving Energy Use Forecast for Campus Micro-grids Using Indirect Indicators. , 2011, , .		48
16	Reactive Resource Provisioning Heuristics for Dynamic Dataflows on Cloud Infrastructure. IEEE Transactions on Cloud Computing, 2015, 3, 105-118.	3.1	46
17	Semantic Information Modeling for Emerging Applications in Smart Grid. , 2012, , .		43
18	A Scalable and Modular Architecture for High-Performance Packet Classification. IEEE Transactions on Parallel and Distributed Systems, 2014, 25, 1135-1144.	4.0	42

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19	Big data analytics for demand response: Clustering over space and time. , 2015, , .		42
20	Holistic Measures for Evaluating Prediction Models in Smart Grids. IEEE Transactions on Knowledge and Data Engineering, 2015, 27, 475-488.	4.0	41
21	Accelerating Graph Analytics on CPU-FPGA Heterogeneous Platform. , 2017, , .		39
22	Automatic Synthesis of Efficient Intrusion Detection Systems on FPGAs. IEEE Transactions on Dependable and Secure Computing, 2006, 3, 289-300.	3.7	38
23	Data Gathering with Tunable Compression in Sensor Networks. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 276-287.	4.0	37
24	Fast parallel algorithm for unfolding of communities in large graphs. , 2014, , .		35
25	A Memory-Balanced Linear Pipeline Architecture for Trie-based IP Lookup. , 2007, , .		34
26	Scalable High Throughput and Power Efficient IP-Lookup on FPGA. , 2009, , .		33
27	Scalable Tree-Based Architectures for IPv4/v6 Lookup Using Prefix Partitioning. IEEE Transactions on Computers, 2012, 61, 1026-1039.	2.4	33
28	Sketch Acceleration on FPGA and its Applications in Network Anomaly Detection. IEEE Transactions on Parallel and Distributed Systems, 2018, 29, 929-942.	4.0	33
29	Adaptive Allocation of Independent Tasks to Maximize Throughput. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 1420-1435.	4.0	32
30	Accelerating Molecular Dynamics Simulations with Reconfigurable Computers. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 764-778.	4.0	32
31	A SRAM-based Architecture for Trie-based IP Lookup Using FPGA. , 2008, , .		30
32	BoostGCN: A Framework for Optimizing GCN Inference on FPGA. , 2021, , .		30
33	A FPGA-based Parallel Architecture for Scalable High-Speed Packet Classification. , 2009, , .		29
34	FEACAN: Front-end acceleration for content-aware network processing. , 2011, , .		29
35	Optimizing memory performance for FPGA implementation of pagerank. , 2015, , .		29
36	Accelerating Large-Scale Single-Source Shortest Path on FPGA. , 2015, , .		28

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37	Multi-dimensional packet classification on FPGA: 100 Gbps and beyond. , 2010, , .		27
38	Extracting discriminative features for event-based electricity disaggregation. , 2014, , .		26
39	Prediction models for dynamic demand response: Requirements, challenges, and insights. , 2015, , .		26
40	MATCH for the Prosumer Smart Grid The Algorithmics of Real-Time Power Balance. IEEE Transactions on Parallel and Distributed Systems, 2016, 27, 3532-3546.	4.0	25
41	Deep Learning Models For Aggregated Network Traffic Prediction. , 2019, , .		24
42	Accelerating Equi-Join on a CPU-FPGA Heterogeneous Platform. , 2016, , .		22
43	Computer Generation of High Throughput and Memory Efficient Sorting Designs on FPGA. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 3100-3113.	4.0	22
44	FRuG: A benchmark for packet forwarding in future networks. , 2010, , .		21
45	Social Networking Analysis: A State of the Art and the Effect of Semantics. , 2011, , .		21
46	Quickly finding a truss in a haystack. , 2017, , .		21
47	Fast generation of high throughput customized deep learning accelerators on FPGAs. , 2017, , .		20
48	Scalable multi-pipeline architecture for high performance multi-pattern string matching. , 2010, , .		19
49	Energy efficient parameterized FFT architecture. , 2013, , .		19
50	High-performance packet classification on GPU. , 2014, , .		19
51	Accelerating Proximal Policy Optimization on CPU-FPGA Heterogeneous Platforms. , 2020, , .		19
52	High throughput energy efficient parallel FFT architecture on FPGAs. , 2013, , .		17
53	Accurate and efficient selection of the best consumption prediction method in smart grids. , 2014, , .		17
54	A hybrid design for high performance large-scale sorting on FPGA. , 2015, , .		17

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55	Social Influence Computation and Maximization in Signed Networks with Competing Cascades. , 2015, , .		17
56	Cryptonite: A Secure and Performant Data Repository on Public Clouds. , 2012, , .		16
57	High Throughput Large Scale Sorting on a CPU-FPGA Heterogeneous Platform. , 2016, , .		16
58	A flexible multi-dimensional QoS performance measure framework for distributed heterogeneous systems. Cluster Computing, 2006, 9, 281-296.	3.5	15
59	Parallel IP lookup using multiple SRAM-based pipelines. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	15
60	Multi-Core Architecture on FPGA for Large Dictionary String Matching. , 2009, , .		15
61	A message-passing multi-softcore architecture on FPGA for Breadth-first Search. , 2010, , .		15
62	ReCALL: Reordered Cache Aware Locality Based Graph Processing. , 2017, , .		15
63	Energy-Efficient Computations on FPGAs. Journal of Supercomputing, 2005, 32, 139-162.	2.4	14
64	Learning to Rank Complex Semantic Relationships. International Journal on Semantic Web and Information Systems, 2012, 8, 1-19.	2.2	14
65	The STREAM Mechanism for CPS Security *The Case of the Smart Grid*. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 537-550.	1.9	14
66	Domain-Specific Modeling for Rapid Energy Estimation of Reconfigurable Architectures. Journal of Supercomputing, 2003, 26, 259-281.	2.4	13
67	Memory-Efficient Pipelined Architecture for Large-Scale String Matching. , 2009, , .		13
68	Predicting Missing Provenance Using Semantic Associations in Reservoir Engineering. , 2011, , .		13
69	Predict Whom One Will Follow: Followee Recommendation in Microblogs. , 2012, , .		13
70	Energy-efficient architecture for stride permutation on streaming data. , 2013, , .		13
71	Influence in social networks: A unified model?. , 2014, , .		13
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73	DeepFlow. , 2017, , .		13
74	HP-GNN: Generating High Throughput GNN Training Implementation on CPU-FPGA Heterogeneous Platform. , 2022, , .		13
75	Node Level Primitives for Parallel Exact Inference. , 2007, , .		12
76	Scalable high-throughput SRAM-based architecture for IP-lookup using FPGA. , 2008, , .		12
77	Automatic generation of high throughput energy efficient streaming architectures for arbitrary fixed permutations. , 2015, , .		12
78	Area-Efficient Arithmetic Expression Evaluation Using Deeply Pipelined Floating-Point Cores. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2008, 16, 167-176.	2.1	11
79	Decision Forest: A Scalable Architecture for Flexible Flow Matching on FPGA. , 2010, , .		11
80	A Semantic Framework for Integrated Asset Management in Smart Oilfields. , 2007, , .		10
81	Optimizing Regular Expression Matching with SR-NFA on Multi-Core Systems. , 2011, , .		10
82	Online heavy hitter detector on FPGA. , 2013, , .		10
83	Towards hybrid online on-demand querying of realtime data with stateful complex event processing. , 2013, , .		10
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88	FASTCF. , 2018, , .		10
89	Energy-Efficient Multi-Pipeline Architecture for Terabit Packet Classification. , 2009, , .		9
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91	Memory-Efficient IPv4/v6 Lookup on FPGAs Using Distance-Bounded Path Compression. , 2011, , .		9
92	Hierarchical hybrid search structure for high performance packet classification. , 2012, , .		9
93	Semiautomatic, Semantic Assistance to Manual Curation of Data in Smart Oil Fields. , 2012, , .		9
94	Energy-efficient Median filter on FPGA. , 2013, , .		9
95	Energy optimizations for FPGA-based 2-D FFT architecture. , 2014, , .		9
96	Model-based assessment for balancing privacy requirements and operational capabilities in the smart grid. , 2015, , .		9
97	Privacy Engineering for the Smart Micro-Grid. IEEE Transactions on Knowledge and Data Engineering, 2019, 31, 965-980.	4.0	9
98	Scalable Hybrid Designs for Linear Algebra on Reconfigurable Computing Systems. IEEE Transactions on Computers, 2008, 57, 1661-1675.	2.4	8
99	Optimizing Decomposition-Based Packet Classification Implementation on FPGAs. , 2011, , .		8
100	Predicting Communication Intention in Social Networks. , 2012, , .		8
101	Data Structure Optimization for Power- Efficient IP Lookup Architectures. IEEE Transactions on Computers, 2013, 62, 2169-2182.	2.4	8
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104	QTAccel: A Generic FPGA based Design for Q-Table based Reinforcement Learning Accelerators. , 2020, , .		8
105	Scalable Packet Classification: Cutting or Merging?. , 2009, , .		7
106	Rankbox: An adaptive ranking system for mining complex semantic relationships using user feedback. , 2012, , .		7
107	Sensors to Events: Semantic Modeling and Recognition of Events from Data Streams. International Journal of Semantic Computing, 2016, 10, 461-501.	0.4	7
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111	Architecture-aware data structure optimization for green IP lookup. , 2010, , .		6
112	Clustered Hierarchical Search Structure for Large-Scale Packet Classification on FPGA. , 2011, , .		6
113	Microblogging in the Enterprise: A Few Comments are in Order. , 2012, , .		6
114	Enterprise Wisdom Captured Socially. , 2012, , .		6
115	Addressing data veracity in big data applications. , 2014, , .		6
116	Scalable GPU-Accelerated IPv6 Lookup Using Hierarchical Perfect Hashing. , 2015, , .		6
117	Computing competing cascades on signed networks. Social Network Analysis and Mining, 2016, 6, 1.	1.9	6
118	Optimal Discrete Net-Load Balancing in Smart Grids with High PV Penetration. ACM Transactions on Sensor Networks, 2018, 14, 1-30.	2.3	6
119	Accelerating Stochastic Gradient Descent Based Matrix Factorization on FPGA. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 1897-1911.	4.0	6
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123	Towards Practical Architectures for SRAM-Based Pipelined Lookup Engines. , 2010, , .		5
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125	An empirical analysis of microblogging behavior in the enterprise. Social Network Analysis and Mining, 2013, 3, 611-633.	1.9	5
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127	High-throughput traffic classification on multi-core processors. , 2014, , .		5
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130	Large-scale packet classification on FPGA. , 2015, , .		5
131	QTAccel. , 2020, , .		5
132	In-network reductions on multi-dimensional HyperX. , 2021, , .		5
133	Efficient Neighbor-Sampling-based GNN Training on CPU-FPGA Heterogeneous Platform. , 2021, , .		5
134	Modeling methodology for application development in petroleum industry. , 0, , .		4
135	Automatic Construction of Large-Scale Regular Expression Matching Engines on FPGA. , 2008, , .		4
136	High Performance Dictionary-Based String Matching for Deep Packet Inspection. , 2010, , .		4
137	Parallel evidence propagation on multicore processors. Journal of Supercomputing, 2011, 57, 189-202.	2.4	4
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141	High Throughput Hierarchical Heavy Hitter Detection in Data Streams. , 2015, , .		4
142	Performance Modeling of Matrix Multiplication on 3D Memory Integrated FPGA. , 2015, , .		4
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147	Applying Semantic Web Techniques to Reservoir Engineering: Challenges and Experiences from Event Modeling. , 2010, , .		3
148	Provenance Collection in Reservoir Management Workflow Environments. , 2010, , .		3
149	Multi-stream Regular Expression Matching on FPGA. , 2011, , .		3
150	Exploring Weak Dependencies in DAG Scheduling. , 2011, , .		3
151	Efficient extraction of high centrality vertices in distributed graphs. , 2014, , .		3
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153	Semantic management of Enterprise Integration Patterns: A use case in Smart Grids. , 2014, , .		3
154	How to Stop Violence Among Homeless: Extension of Voter Model and Intervention Strategies. , 2018, , .		3
155	Risk aware net load balancing in micro grids with high DER penetration. , 2018, , .		3
156	NO-LESS: Near optimal curtailment strategy selection for net load balancing in micro grids. , 2018, , .		3
157	A Memory-Balanced Linear Pipeline Architecture for Trie-based IP Lookup. , 2007, , .		3
158	ENERGY BALANCED COMMUNICATION IN WIRELESS SENSOR NETWORKS. , 2003, , .		3
159	PPOAccel: A High-Throughput Acceleration Framework for Proximal Policy Optimization. IEEE Transactions on Parallel and Distributed Systems, 2022, 33, 2066-2078.	4.0	3
160	Data component based management of reservoir simulation models. , 2008, , .		2
161	Multi-Way Pipelining for Power-Efficient IP Lookup. , 2008, , .		2
162	Transitive closure on the cell broadband engine: A study on self-scheduling in a multicore processor. , 2009, , .		2

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163	High-throughput IP-lookup supporting dynamic routing tables using FPGA. , 2010, , .		2
164	Data Parallelism for Belief Propagation in Factor Graphs. , 2011, , .		2
165	Task Parallel Implementation of Belief Propagation in Factor Graphs. , 2012, , .		2
166	Parallel Exact Inference on Multicore Using MapReduce. , 2012, , .		2
167	Optimizing packet lookup in time and space on FPGA. , 2012, , .		2
168	A memory efficient IPv6 lookup engine on FPGA. , 2012, , .		2
169	Energy-efficient histogram on FPGA. , 2014, , .		2
170	Energy- and area-efficient parameterized lifting-based 2-D DWT architecture on FPGA. , 2014, , .		2
171	High level performance model based design space exploration for energy-efficient designs on FPGAs. , 2014, , .		2
172	Peer review in online forums: Classifying feedback-sentiment. , 2014, , .		2
173	On-chip memory efficient data layout for 2D FFT on 3D memory integrated FPGA. , 2016, , .		2
174	Software defined connected prosumer communities. , 2016, , .		2
175	Matrix Computations on Heterogeneous Reconfigurable Systems. , 2008, , .		1
176	Distributed Evidence Propagation in Junction Trees. , 2010, , .		1
177	Hybrid Data Structure for IP Lookup in Virtual Routers Using FPGAs. , 2011, , .		1
178	FPGA-based Router Virtualization: A Power Perspective. , 2012, , .		1
179	Energy efficient architecture for matrix multiplication on FPGAs. , 2013, , .		1
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183	Data Parallel Implementation of Belief Propagation in Factor Graphs on Multi-core Platforms. International Journal of Parallel Programming, 2014, 42, 219-237.	1.1	1
184	High throughput sketch based online heavy change detection on FPGA. , 2015, , .		1
185	Improved protection scheme for data attack on strategic buses in the Smart Grid. , 2016, , .		1
186	Optimizing interconnection complexity for realizing fixed permutation in data and signal processing algorithms. , 2016, , .		1
187	Accelerating Support Count for Association Rule Mining on GPUs. , 2016, , .		1
188	Accelerating low rank matrix completion on FPGA. , 2017, , .		1
189	A Fast and Efficient Parallel Algorithm for Pruned Landmark Labeling. , 2018, , .		1
190	Minimizing Cost of Load Matching in Multiple Micro-Grids Using MESS. , 2018, , .		1
191	Network-based intervention strategies to reduce violence among homeless. Social Network Analysis and Mining, 2019, 9, 1.	1.9	1
192	Programmable FPGA-based Memory Controller. , 2021, , .		1
193	Introduction to Special Issue on FPGAs in Data Centers. ACM Transactions on Reconfigurable Technology and Systems, 2022, 15, 1-2.	1.9	1
194	DOSA: Design Optimizer for Scientific Applications. , 2007, , .		0
195	Parallel exact inference on the Cell Broadband Engine processor. , 2008, , .		0
196	Integrating Provenance Information in Reservoir Engineering. , 2010, , .		0
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198	A SEMANTIC-BASED APPROACH FOR HANDLING INCOMPLETE AND INACCURATE PROVENANCE IN RESERVOIR ENGINEERING. International Journal of Semantic Computing, 2011, 05, 383-406.	0.4	0

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199	Self-Adaptive Evidence Propagation on Manycore Processors. , 2011, , .		0
200	Power-efficient and scalable virtual router architecture on FPGA. , 2012, , .		0
201	Optimal mapping of multiple packet lookup schemes onto FPGA. , 2013, , .		0
202	Wire Speed IPv6 Forwarding on Multi-core Platforms. , 2013, , .		0
203	Algorithmic optimizations for energy efficient throughput-oriented FFT architectures on FPGA. , 2014, , .		0
204	Scalable GPU-Accelerated IPv6 Lookup Using Hierarchical Perfect Hashing. , 2014, , .		0
205	Protecting critical buses in power-grid against data attacks: Adaptive protection schemes for smart cities. , 2016, , .		0
206	IP Cores for Graph Kernels on FPGAs. , 2019, , .		0
207	FGYM: Toolkit for Benchmarking FPGA based Reinforcement Learning Algorithms. , 2021, , .		0
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209	Introduction to Special Issue on FPGAs in Data Centers, Part II. ACM Transactions on Reconfigurable Technology and Systems, 2022, 15, 1-2.	1.9	0
210	Accelerating Deformable Convolution Networks. , 2022, , .		0