

# Viktor K Prasanna

## List of Publications by Year in descending order

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Version: 2024-02-01

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	Accelerating Allreduce With In-Network Reduction on Intel PIUMA. IEEE Micro, 2022, 42, 44-52.	1.8	4
2	PPOAccel: A High-Throughput Acceleration Framework for Proximal Policy Optimization. IEEE Transactions on Parallel and Distributed Systems, 2022, 33, 2066-2078.	4.0	3
3	Introduction to Special Issue on FPGAs in Data Centers. ACM Transactions on Reconfigurable Technology and Systems, 2022, 15, 1-2.	1.9	1
4	HP-GNN: Generating High Throughput GNN Training Implementation on CPU-FPGA Heterogeneous Platform. , 2022, , .		13
5	Safe Building HVAC Control via Batch Reinforcement Learning. IEEE Transactions on Sustainable Computing, 2022, 7, 923-934.	2.2	7
6	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
7	Accelerating Deformable Convolution Networks. , 2022, , .		0
8	An LSTM Framework for Software-Defined Measurement. IEEE Transactions on Network and Service Management, 2021, 18, 855-869.	3.2	7
9	BoostGCN: A Framework for Optimizing GCN Inference on FPGA. , 2021, , .		30
10	FGYM: Toolkit for Benchmarking FPGA based Reinforcement Learning Algorithms. , 2021, , .		0
11	Programmable FPGA-based Memory Controller. , 2021, , .		1
12	In-network reductions on multi-dimensional HyperX. , 2021, , .		5
13	Efficient Neighbor-Sampling-based GNN Training on CPU-FPGA Heterogeneous Platform. , 2021, , .		5
14	QTAccel: A Generic FPGA based Design for Q-Table based Reinforcement Learning Accelerators. , 2020, , .		8
15	Accelerating Proximal Policy Optimization on CPU-FPGA Heterogeneous Platforms. , 2020, , .		19
16	Accelerating Stochastic Gradient Descent Based Matrix Factorization on FPGA. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 1897-1911.	4.0	6
17	QTAccel. , 2020, , .		5
18	Parallel Totally Induced Edge Sampling on FPGAs1. Advances in Parallel Computing, 2020, , .	0.3	0

#	ARTICLE	IF	CITATIONS
19	Privacy Engineering for the Smart Micro-Grid. IEEE Transactions on Knowledge and Data Engineering, 2019, 31, 965-980.	4.0	9
20	Network-based intervention strategies to reduce violence among homeless. Social Network Analysis and Mining, 2019, 9, 1.	1.9	1
21	HitGraph: High-throughput Graph Processing Framework on FPGA. IEEE Transactions on Parallel and Distributed Systems, 2019, 30, 2249-2264.	4.0	59
22	Minimizing Cost of Smart Grid Operations by Scheduling Mobile Energy Storage Systems. IEEE Letters of the Computer Society, 2019, 2, 20-23.	1.1	7
23	Deep Learning Models For Aggregated Network Traffic Prediction. , 2019, , .		24
24	IP Cores for Graph Kernels on FPGAs. , 2019, , .		0
25	Building HVAC Scheduling Using Reinforcement Learning via Neural Network Based Model Approximation. , 2019, , .		62
26	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
27	FASTCF. , 2018, , .		10
28	A Fast and Efficient Parallel Algorithm for Pruned Landmark Labeling. , 2018, , .		1
29	Generative Adversarial Network for Synthetic Time Series Data Generation in Smart Grids. , 2018, , .		64
30	Subset Level Detection of False Data Injection Attacks in Smart Grids. , 2018, , .		8
31	Minimizing Cost of Load Matching in Multiple Micro-Grids Using MESS. , 2018, , .		1
32	How to Stop Violence Among Homeless: Extension of Voter Model and Intervention Strategies. , 2018, , .		3
33	Optimal Discrete Net-Load Balancing in Smart Grids with High PV Penetration. ACM Transactions on Sensor Networks, 2018, 14, 1-30.	2.3	6
34	Extracting Entity-Specific Substructures for RDF Graph Embedding. , 2018, , .		4
35	Risk aware net load balancing in micro grids with high DER penetration. , 2018, , .		3
36	NO-LESS: Near optimal curtailment strategy selection for net load balancing in micro grids. , 2018, , .		3

#	ARTICLE	IF	CITATIONS
37	The STREAM Mechanism for CPS Security <i>The Case of the Smart Grid</i> . IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2017, 36, 537-550.	1.9	14
38	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
39	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
40	Fast and efficient implementation of Convolutional Neural Networks on FPGA. , 2017, , .		51
41	ReCALL: Reordered Cache Aware Locality Based Graph Processing. , 2017, , .		15
42	DeepFlow. , 2017, , .		13
43	Accelerating Graph Analytics on CPU-FPGA Heterogeneous Platform. , 2017, , .		39
44	Accelerating low rank matrix completion on FPGA. , 2017, , .		1
45	Fast generation of high throughput customized deep learning accelerators on FPGAs. , 2017, , .		20
46	Quickly finding a truss in a haystack. , 2017, , .		21
47	Improved protection scheme for data attack on strategic buses in the Smart Grid. , 2016, , .		1
48	On-chip memory efficient data layout for 2D FFT on 3D memory integrated FPGA. , 2016, , .		2
49	Software defined connected prosumer communities. , 2016, , .		2
50	Towards Dynamic Demand Response On Efficient Consumer Grouping Algorithms. IEEE Transactions on Sustainable Computing, 2016, 1, 20-34.	2.2	10
51	Protecting critical buses in power-grid against data attacks: Adaptive protection schemes for smart cities. , 2016, , .		0
52	Sensors to Events: Semantic Modeling and Recognition of Events from Data Streams. International Journal of Semantic Computing, 2016, 10, 461-501.	0.4	7
53	Optimizing interconnection complexity for realizing fixed permutation in data and signal processing algorithms. , 2016, , .		1
54	Accelerating Support Count for Association Rule Mining on GPUs. , 2016, , .		1

#	ARTICLE	IF	CITATIONS
55	High-Throughput and Energy-Efficient Graph Processing on FPGA. , 2016, , .		50
56	Accelerating Equi-Join on a CPU-FPGA Heterogeneous Platform. , 2016, , .		22
57	Computing competing cascades on signed networks. Social Network Analysis and Mining, 2016, 6, 1.	1.9	6
58	High Throughput Large Scale Sorting on a CPU-FPGA Heterogeneous Platform. , 2016, , .		16
59	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
60	Scalable GPU-Accelerated IPv6 Lookup Using Hierarchical Perfect Hashing. , 2015, , .		6
61	A hybrid design for high performance large-scale sorting on FPGA. , 2015, , .		17
62	High Throughput Hierarchical Heavy Hitter Detection in Data Streams. , 2015, , .		4
63	Prediction models for dynamic demand response: Requirements, challenges, and insights. , 2015, , .		26
64	Performance Modeling of Matrix Multiplication on 3D Memory Integrated FPGA. , 2015, , .		4
65	Automatic generation of high throughput energy efficient streaming architectures for arbitrary fixed permutations. , 2015, , .		12
66	Social Influence Computation and Maximization in Signed Networks with Competing Cascades. , 2015, , .		17
67	Optimizing memory performance for FPGA implementation of pagerank. , 2015, , .		29
68	High throughput sketch based online heavy change detection on FPGA. , 2015, , .		1
69	Big data analytics for demand response: Clustering over space and time. , 2015, , .		42
70	The unified model of social influence and its application in influence maximization. Social Network Analysis and Mining, 2015, 5, 1.	1.9	10
71	Holistic Measures for Evaluating Prediction Models in Smart Grids. IEEE Transactions on Knowledge and Data Engineering, 2015, 27, 475-488.	4.0	41
72	Reactive Resource Provisioning Heuristics for Dynamic Dataflows on Cloud Infrastructure. IEEE Transactions on Cloud Computing, 2015, 3, 105-118.	3.1	46

#	ARTICLE	IF	CITATIONS
73	Accelerating Large-Scale Single-Source Shortest Path on FPGA. , 2015, , .		28
74	Model-based assessment for balancing privacy requirements and operational capabilities in the smart grid. , 2015, , .		9
75	Real-Time Analytics for Fast Evolving Social Graphs. , 2015, , .		10
76	Large-scale packet classification on FPGA. , 2015, , .		5
77	Energy-efficient histogram on FPGA. , 2014, , .		2
78	Addressing data veracity in big data applications. , 2014, , .		6
79	Integrated platform for automated sustainable demand response in smart grids. , 2014, , .		5
80	High-performance packet classification on GPU. , 2014, , .		19
81	400 Gbps energy-efficient multi-field packet classification on FPGA. , 2014, , .		1
82	Efficient extraction of high centrality vertices in distributed graphs. , 2014, , .		3
83	Extracting discriminative features for event-based electricity disaggregation. , 2014, , .		26
84	Guest Editorial Deep Packet Inspection: Algorithms, Hardware, and Applications. IEEE Journal on Selected Areas in Communications, 2014, 32, 1781-1783.	9.7	3
85	Fast parallel algorithm for unfolding of communities in large graphs. , 2014, , .		35
86	Energy performance of FPGAs on PERFECT suite kernels. , 2014, , .		10
87	Energy-efficient histogram equalization on FPGA. , 2014, , .		1
88	High-throughput traffic classification on multi-core processors. , 2014, , .		5
89	Influence in social networks: A unified model?. , 2014, , .		13
90	High-Performance Traffic Classification on GPU. , 2014, , .		5

#	ARTICLE	IF	CITATIONS
91	Energy- and area-efficient parameterized lifting-based 2-D DWT architecture on FPGA. , 2014, , .		2
92	Accurate and efficient selection of the best consumption prediction method in smart grids. , 2014, , .		17
93	Energy optimizations for FPGA-based 2-D FFT architecture. , 2014, , .		9
94	Algorithmic optimizations for energy efficient throughput-oriented FFT architectures on FPGA. , 2014, , .		0
95	High level performance model based design space exploration for energy-efficient designs on FPGAs. , 2014, , .		2
96	A Scalable and Modular Architecture for High-Performance Packet Classification. IEEE Transactions on Parallel and Distributed Systems, 2014, 25, 1135-1144.	4.0	42
97	Semantic management of Enterprise Integration Patterns: A use case in Smart Grids. , 2014, , .		3
98	Multi-core implementation of decomposition-based packet classification algorithms. Journal of Supercomputing, 2014, 69, 34-42.	2.4	5
99	Computational models of technology adoption at the workplace. Social Network Analysis and Mining, 2014, 4, 1.	1.9	13
100	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
101	Scalable GPU-Accelerated IPv6 Lookup Using Hierarchical Perfect Hashing. , 2014, , .		0
102	Peer review in online forums: Classifying feedback-sentiment. , 2014, , .		2
103	An empirical analysis of microblogging behavior in the enterprise. Social Network Analysis and Mining, 2013, 3, 611-633.	1.9	5
104	Data Structure Optimization for Power- Efficient IP Lookup Architectures. IEEE Transactions on Computers, 2013, 62, 2169-2182.	2.4	8
105	Energy-efficient large-scale matrix multiplication on FPGAs. , 2013, , .		8
106	Energy-efficient Median filter on FPGA. , 2013, , .		9
107	Online heavy hitter detector on FPGA. , 2013, , .		10
108	Towards hybrid online on-demand querying of realtime data with stateful complex event processing. , 2013, , .		10

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109	Energy efficient parameterized FFT architecture. , 2013, , .		19
110	Optimal mapping of multiple packet lookup schemes onto FPGA. , 2013, , .		0
111	High throughput energy efficient parallel FFT architecture on FPGAs. , 2013, , .		17
112	100+ Gbps IPv6 packet forwarding on multi-core platforms. , 2013, , .		4
113	Energy efficient architecture for matrix multiplication on FPGAs. , 2013, , .		1
114	Wire Speed IPv6 Forwarding on Multi-core Platforms. , 2013, , .		0
115	A high-performance IPV6 lookup engine on FPGA. , 2013, , .		1
116	Energy-efficient architecture for stride permutation on streaming data. , 2013, , .		13
117	Microblogging in the Enterprise: A Few Comments are in Order. , 2012, , .		6
118	Enterprise Wisdom Captured Socially. , 2012, , .		6
119	Hierarchical hybrid search structure for high performance packet classification. , 2012, , .		9
120	Task Parallel Implementation of Belief Propagation in Factor Graphs. , 2012, , .		2
121	Predict Whom One Will Follow: Followee Recommendation in Microblogs. , 2012, , .		13
122	Semiautomatic, Semantic Assistance to Manual Curation of Data in Smart Oil Fields. , 2012, , .		9
123	Distributed Evidence Propagation in Junction Trees on Clusters. IEEE Transactions on Parallel and Distributed Systems, 2012, 23, 1169-1177.	4.0	4
124	Scalable Packet Classification on FPGA. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2012, 20, 1668-1680.	2.1	115
125	Parallel Exact Inference on Multicore Using MapReduce. , 2012, , .		2
126	Large-scale multi-flow regular expression matching on FPGA. , 2012, , .		4



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127	Optimizing packet lookup in time and space on FPGA. , 2012, , .		2
128	StrideBV: Single chip 400G+ packet classification. , 2012, , .		50
129	A memory efficient IPv6 lookup engine on FPGA. , 2012, , .		2
130	Rankbox: An adaptive ranking system for mining complex semantic relationships using user feedback. , 2012, , .		7
131	Power-efficient and scalable virtual router architecture on FPGA. , 2012, , .		0
132	Predicting Communication Intention in Social Networks. , 2012, , .		8
133	FPGA-based Router Virtualization: A Power Perspective. , 2012, , .		1
134	Cryptonite: A Secure and Performant Data Repository on Public Clouds. , 2012, , .		16
135	Semantic Information Modeling for Emerging Applications in Smart Grid. , 2012, , .		43
136	Learning to Rank Complex Semantic Relationships. International Journal on Semantic Web and Information Systems, 2012, 8, 1-19.	2.2	14
137	Scalable Tree-Based Architectures for IPv4/v6 Lookup Using Prefix Partitioning. IEEE Transactions on Computers, 2012, 61, 1026-1039.	2.4	33
138	Multi-stream Regular Expression Matching on FPGA. , 2011, , .		3
139	Optimizing Regular Expression Matching with SR-NFA on Multi-Core Systems. , 2011, , .		10
140	Hybrid Data Structure for IP Lookup in Virtual Routers Using FPGAs. , 2011, , .		1
141	Exploring Weak Dependencies in DAG Scheduling. , 2011, , .		3
142	Data Parallelism for Belief Propagation in Factor Graphs. , 2011, , .		2
143	Memory-Efficient IPv4/v6 Lookup on FPGAs Using Distance-Bounded Path Compression. , 2011, , .		9
144	An Analysis of Security and Privacy Issues in Smart Grid Software Architectures on Clouds. , 2011, , .		84

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145	Clustered Hierarchical Search Structure for Large-Scale Packet Classification on FPGA. , 2011, , .		6
146	Parallel evidence propagation on multicore processors. Journal of Supercomputing, 2011, 57, 189-202.	2.4	4
147	Predicting Missing Provenance Using Semantic Associations in Reservoir Engineering. , 2011, , .		13
148	Towards On-the-Fly Incremental Updates for Virtualized Routers on FPGA. , 2011, , .		5
149	Optimizing Decomposition-Based Packet Classification Implementation on FPGAs. , 2011, , .		8
150	Improving Energy Use Forecast for Campus Micro-grids Using Indirect Indicators. , 2011, , .		48
151	FEACAN: Front-end acceleration for content-aware network processing. , 2011, , .		29
152	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
153	Self-Adaptive Evidence Propagation on Manycore Processors. , 2011, , .		0
154	Social Networking Analysis: A State of the Art and the Effect of Semantics. , 2011, , .		21
155	Integrating Provenance Information in Reservoir Engineering. , 2010, , .		0
156	Applying Semantic Web Techniques to Reservoir Engineering: Challenges and Experiences from Event Modeling. , 2010, , .		3
157	Multi-dimensional packet classification on FPGA: 100 Gbps and beyond. , 2010, , .		27
158	Intelligent Model Management and Visualization for Smart Oilfields. , 2010, , .		5
159	High Performance Dictionary-Based String Matching for Deep Packet Inspection. , 2010, , .		4
160	FRuG: A benchmark for packet forwarding in future networks. , 2010, , .		21
161	High-throughput IP-lookup supporting dynamic routing tables using FPGA. , 2010, , .		2
162	A message-passing multi-softcore architecture on FPGA for Breadth-first Search. , 2010, , .		15

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163	Scalable multi-pipeline architecture for high performance multi-pattern string matching. , 2010, , .		19
164	Workflow management of simulation based computation processes in transportation domain. , 2010, , .		0
165	Distributed Evidence Propagation in Junction Trees. , 2010, , .		1
166	Towards Practical Architectures for SRAM-Based Pipelined Lookup Engines. , 2010, , .		5
167	Decision Forest: A Scalable Architecture for Flexible Flow Matching on FPGA. , 2010, , .		11
168	Provenance Collection in Reservoir Management Workflow Environments. , 2010, , .		3
169	Architecture-aware data structure optimization for green IP lookup. , 2010, , .		6
170	Scalable Packet Classification: Cutting or Merging?. , 2009, , .		7
171	Transitive closure on the cell broadband engine: A study on self-scheduling in a multicore processor. , 2009, , .		2
172	Energy-Efficient Multi-Pipeline Architecture for Terabit Packet Classification. , 2009, , .		9
173	Reducing dynamic power dissipation in pipelined forwarding engines. , 2009, , .		9
174	Multi-Core Architecture on FPGA for Large Dictionary String Matching. , 2009, , .		15
175	Scalable High Throughput and Power Efficient IP-Lookup on FPGA. , 2009, , .		33
176	A FPGA-based Parallel Architecture for Scalable High-Speed Packet Classification. , 2009, , .		29
177	Memory-Efficient Pipelined Architecture for Large-Scale String Matching. , 2009, , .		13
178	Scalable high-throughput SRAM-based architecture for IP-lookup using FPGA. , 2008, , .		12
179	High-Performance Designs for Linear Algebra Operations on Reconfigurable Hardware. IEEE Transactions on Computers, 2008, 57, 1057-1071.	2.4	68
180	Scalable Hybrid Designs for Linear Algebra on Reconfigurable Computing Systems. IEEE Transactions on Computers, 2008, 57, 1661-1675.	2.4	8

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181	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
182	Automatic Construction of Large-Scale Regular Expression Matching Engines on FPGA. , 2008, , .		4
183	Accelerating Molecular Dynamics Simulations with Reconfigurable Computers. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 764-778.	4.0	32
184	A SRAM-based Architecture for Trie-based IP Lookup Using FPGA. , 2008, , .		30
185	Data Gathering with Tunable Compression in Sensor Networks. IEEE Transactions on Parallel and Distributed Systems, 2008, 19, 276-287.	4.0	37
186	Parallel exact inference on the Cell Broadband Engine processor. , 2008, , .		0
187	Data component based management of reservoir simulation models. , 2008, , .		2
188	Parallel IP lookup using multiple SRAM-based pipelines. Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on, 2008, , .	1.0	15
189	Matrix Computations on Heterogeneous Reconfigurable Systems. , 2008, , .		1
190	Multi-Way Pipelining for Power-Efficient IP Lookup. , 2008, , .		2
191	A Memory-Balanced Linear Pipeline Architecture for Trie-based IP Lookup. , 2007, , .		34
192	DOSA: Design Optimizer for Scientific Applications. , 2007, , .		0
193	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
194	High-Performance Reduction Circuits Using Deeply Pipelined Operators on FPGAs. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 1377-1392.	4.0	65
195	Hardware/Software Co-Design for Matrix Computations on Reconfigurable Computing Systems. , 2007, , .		3
196	Adaptive Allocation of Independent Tasks to Maximize Throughput. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 1420-1435.	4.0	32
197	A Semantic Framework for Integrated Asset Management in Smart Oilfields. , 2007, , .		10
198	ModelML: a Markup Language for Automatic Model Synthesis. , 2007, , .		5

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199	Node Level Primitives for Parallel Exact Inference. , 2007, , .		12
200	A Memory-Balanced Linear Pipeline Architecture for Trie-based IP Lookup. , 2007, , .		3
201	Energy Minimization for Real-Time Data Gathering in Wireless Sensor Networks. IEEE Transactions on Wireless Communications, 2006, 5, 3087-3096.	6.1	65
202	Automatic Synthesis of Efficient Intrusion Detection Systems on FPGAs. IEEE Transactions on Dependable and Secure Computing, 2006, 3, 289-300.	3.7	38
203	A flexible multi-dimensional QoS performance measure framework for distributed heterogeneous systems. Cluster Computing, 2006, 9, 281-296.	3.5	15
204	Fault-tolerant analysis for multiple servers movie retrieval strategy for distributed multimedia applications. Multimedia Tools and Applications, 2006, 32, 1-27.	2.6	3
205	Energy-Balanced Task Allocation for Collaborative Processing in Wireless Sensor Networks. Mobile Networks and Applications, 2005, 10, 115-131.	2.2	137
206	Energy-Efficient Computations on FPGAs. Journal of Supercomputing, 2005, 32, 139-162.	2.4	14
207	Domain-Specific Modeling for Rapid Energy Estimation of Reconfigurable Architectures. Journal of Supercomputing, 2003, 26, 259-281.	2.4	13
208	ENERGY BALANCED COMMUNICATION IN WIRELESS SENSOR NETWORKS. , 2003, , .		3
209	Fast Arithmetic on Reconfigurable Meshes. , 1993, , .		5
210	Modeling methodology for application development in petroleum industry. , 0, , .		4