Arun K Somani

List of Publications by Year
in descending order

165 papers	2,773 citations	279487 23 h-index	253896 43 g-index
177 all docs	177 docs citations	177 times ranked	1061 citing authors

#	ARTICLE	IF	CITATIONS
1	All-optical networks with sparse wavelength conversion. IEEE/ACM Transactions on Networking, 1996, 4, 544-557.	2.6	359
2	Efficient algorithms for routing dependable connections in WDM optical networks. IEEE/ACM Transactions on Networking, 2001, 9, 553-566.	2.6	167
3	Dynamic wavelength routing using congestion and neighborhood information. IEEE/ACM Transactions on Networking, 1999, 7, 779-786.	2.6	158
4	Computationally-efficient phased-mission reliability analysis for systems with variable configurations. IEEE Transactions on Reliability, 1992, 41, 504-511.	3.5	100
5	On optimal converter placement in wavelength-routed networks. IEEE/ACM Transactions on Networking, 1999, 7, 754-766.	2.6	94
6	On diagnosability of large fault sets in regular topology-based computer systems. IEEE Transactions on Computers, 1996, 45, 892-903.	2.4	92
7	A practical approach to operating survivable WDM networks. IEEE Journal on Selected Areas in Communications, 2002, 20, 34-46.	9.7	83
8	A new analytical model for multifiber WDM networks. IEEE Journal on Selected Areas in Communications, 2000, 18, 2138-2145.	9.7	65
9	Cross-talk attack monitoring and localization in all-optical networks. IEEE/ACM Transactions on Networking, 2005, 13, 1390-1401.	2.6	64
10	A generalized framework for analyzing time-space switched optical networks. IEEE Journal on Selected Areas in Communications, 2002, 20, 202-215.	9.7	61
11	Traffic grooming for survivable WDM mesh networks. , 2001, , .		56
12	CompuP2P: An Architecture for Internet Computing Using Peer-to-Peer Networks. IEEE Transactions on Parallel and Distributed Systems, 2006, 17, 1306-1320.	4.0	55
13	Area efficient architectures for information integrity in cache memories. Computer Architecture News, 1999, 27, 246-255.	2.5	47
14	Dynamic Routing in WDM Grooming Networks. Photonic Network Communications, 2003, 5, 123-135.	1.4	47
15	An adaptive scheme for fault-tolerant scheduling of soft real-time tasks in multiprocessor systems. Journal of Parallel and Distributed Computing, 2005, 65, 595-608.	2.7	47
16	<title>Capacity fairness of WDM networks with grooming capabilities</title>. , 2000, 4233, 191.		46
17	Efficient overloading techniques for primary-backup scheduling in real-time systems. Journal of Parallel and Distributed Computing, 2004, 64, 629-648.	2.7	45
18	Scalable, memory efficient, high-speed IP lookup algorithms. IEEE/ACM Transactions on Networking, 2005, 13, 802-812.	2.6	44

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19	Monocular vision SLAM for indoor aerial vehicles. , 2009, , .		41
20	Distributed diagnosis algorithms for regular interconnected structures. IEEE Transactions on Computers, 1992, 41, 899-906.	2.4	38
21	High-speed ip routing with binary decision diagrams based hardware address lookup engine. IEEE Journal on Selected Areas in Communications, 2003, 21, 513-521.	9.7	38
22	Low overhead multiprocessor allocation strategies exploiting system spare capacity for fault detection and location. IEEE Transactions on Computers, 1995, 44, 865-877.	2.4	34
23	A reconfigurable multifunction computing cache architecture. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2001, 9, 509-523.	2.1	31
24	On multicasting in wavelength-routing mesh networks. Computer Networks, 2006, 50, 3105-3164.	3.2	30
25	Countering Power Analysis Attacks UsingReliable and Aggressive Designs. IEEE Transactions on Computers, 2014, 63, 1408-1420.	2.4	30
26	Rearrangeable Circuit-Switched Hypercube Architectures for Routing Permutations. Journal of Parallel and Distributed Computing, 1993, 19, 125-130.	2.7	28
27	Capacity Optimization for Surviving Double-Link Failures in Mesh-Restorable Optical Networks. Photonic Network Communications, 2005, 9, 99-111.	1.4	28
28	On Trading Wavelengths With Fibers: A Cost-Performance Based Study. IEEE/ACM Transactions on Networking, 2004, 12, 944-951.	2.6	26
29	Monocular Vision SLAM for Indoor Aerial Vehicles. Journal of Electrical and Computer Engineering, 2013, 2013, 1-15.	0.6	25
30	An Autonomic Virtual Topology Design and Two-Stage Scheduling Algorithm for Light-Trail WDM Networks. Journal of Optical Communications and Networking, 2011, 3, 372.	3.3	23
31	Resilience and robustness in long-term planning of the national energy and transportation system. International Journal of Critical Infrastructures, 2016, 12, 82.	0.1	21
32	<title>Capacity optimization for surviving double-Link failures in mesh-restorable optical networks</title>. , 2002, 4874, 13.		20
33	Graph transformation approaches for diverse routing in shared risk resource group (SRRG) failures. Computer Networks, 2008, 52, 2381-2394.	3.2	20
34	Low overhead Soft Error Mitigation techniques for high-performance and aggressive systems. , 2009, , .		20
35	Sequential fault occurrence and reconfiguration in system level diagnosis. IEEE Transactions on Computers, 1990, 39, 1472-1475.	2.4	19
36	Fault-containment in cache memories for TMR redundant processor systems. IEEE Transactions on Computers, 1999, 48, 386-397.	2.4	19

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37	The benefits of wavelength conversion in WDM networks with non-Poisson traffic. IEEE Communications Letters, 1999, 3, 81-83.	2.5	19
38	Sub-graph routing: A generalized fault-tolerant strategy for link failures in WDM optical networks. Computer Networks, 2006, 50, 181-199.	3.2	19
39	Phased-mission system analysis using Boolean algebraic methods. Performance Evaluation Review, 1994, 22, 98-107.	0.4	17
40	<title>Blocking performance analysis of fixed-paths least-congestion routing in multifiber WDM networks</title>. , 1999, , .		17
41	On achieving fairness and efficiency in high-speed shared medium access. IEEE/ACM Transactions on Networking, 2003, 11, 111-124.	2.6	17
42	Permutation warping for data parallel volume rendering. , 1993, , .		16
43	<title>Revenue maximization in survivable WDM networks</title>. , 2000, , .		16
44	On-line integrity monitoring of microprocessor control logic. Microelectronics Journal, 2001, 32, 999-1007.	1.1	16
45	Cache tiling for high performance morphological image processing. Machine Vision and Applications, 1993, 7, 12-22.	1.7	15
46	A reconfigurable multi-function computing cache architecture. , 2000, , .		15
47	2D and 3D Optimal Parallel Image Warping. Journal of Parallel and Distributed Computing, 1995, 25, 197-208.	2.7	13
48	Time and Space Optimal Data Parallel Volume Rendering Using Permutation Warping. Journal of Parallel and Distributed Computing, 1997, 46, 148-164.	2.7	13
49	An integrated reliability modeling environment. Reliability Engineering and System Safety, 1999, 65, 65-75.	5.1	13
50	Analysis of Optical Networks With Heterogeneous Grooming Architectures. IEEE/ACM Transactions on Networking, 2004, 12, 931-943.	2.6	13
51	Extending Light-Trails to Regional Networks: Multi-hop Light-Trails (MLT)â€"System Design and Performance. Journal of Optical Communications and Networking, 2012, 4, 1046.	3.3	13
52	<title>Performance analysis of WDM optical networks with grooming capabilities</title>. , 2000, 4213, 253.		12
53	<title>Attack monitoring and localization in all-optical networks</title>. , 2002, , .		12
54	On the complexity of single fault set diagnosability and diagnosis problems. IEEE Transactions on Computers, 1989, 38, 195-201.	2.4	11

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55	Scalable Segment Routing—A New Paradigm for Efficient Service Provider Networking Using Carrier Ethernet Advances. Journal of Optical Communications and Networking, 2015, 7, 445.	3.3	11
56	The generalized folding-cube network. Networks, 1991, 21, 267-294.	1.6	10
57	Traffic Grooming in Statistically Shared Optical Networks. Local Computer Networks (LCN), Proceedings of the IEEE Conference on, 2006, , .	0.0	10
58	Attention-Based Road Registration for GPS-Denied UAS Navigation. IEEE Transactions on Neural Networks and Learning Systems, 2021, 32, 1788-1800.	7.2	10
59	AUTOMATED SHAPE-BASED PAVEMENT CRACK DETECTION APPROACH. Transport, 2018, 33, 598-608.	0.6	10
60	Beyond the arithmetic constraint. , 2008, , .		9
61	Reliability analysis techniques for complex multiple fault tolerant computer architectures. IEEE Transactions on Reliability, 1990, 39, 547-556.	3.5	8
62	Optimal wavelength converter placement in arbitrary topology wavelength-routed networks. Computer Communications, 2003, 26, 975-985.	3.1	8
63	On Traffic Grooming Choices for IP over WDM networks. , 2006, , .		8
64	Dynamic Routing with Partial Information in Mesh-Restorable Optical Networks. IFIP Advances in Information and Communication Technology, 2003, , 327-343.	0.5	8
65	An adaptive write error detection technique in on-chip caches of multi-level caching systems. Microprocessors and Microsystems, 1999, 22, 561-570.	1.8	7
66	Wavelength assignment algorithms for wavelength routed interconnection of LANs. Journal of Lightwave Technology, 2000, 18, 1807-1817.	2.7	7
67	Low-power high-performance reconfigurable computing cache architectures. IEEE Transactions on Computers, 2004, 53, 1274-1290.	2.4	7
68	Multi-Bit Carry Chains for High-Performance Reconfigurable Fabrics. , 2006, , .		7
69	Design algorithms for path-level grooming of traffic in WDM metro optical networks. Journal of Optical Networking, 2008, 7, 759.	2.5	7
70	Conjoined Pipeline: Enhancing Hardware Reliability and Performance through Organized Pipeline Redundancy. , 2008, , .		7
71	Managing the Impact of On-chip Temperature on the Lifetime Reliability of Reliably Overclocked Systems. , 2009, , .		7
72	Finding Complex Cycles through a Set of Nodes. , 2011, , .		7

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73	Proactive task scheduling and stealing in master-slave based load balancing for parallel contingency analysis. Electric Power Systems Research, 2013, 103, 9-15.	2.1	7
74	Characterization of mountain drainage patterns for GPS-denied UAS navigation augmentation. Machine Vision and Applications, 2016, 27, 87-101.	1.7	7
75	Host managed contention avoidance storage solutions for Big Data. Journal of Big Data, 2017, 4, .	6.9	7
76	A Fault-Tolerant Multipoint Cycle Routing Algorithm (MCRA). Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 341-360.	0.2	7
77	DIRSMIN: a fault-tolerant switch for B-ISDN applications using dilated reduced-stage MIN. IEEE Transactions on Reliability, 1998, 47, 19-29.	3.5	6
78	<title>Operating mesh-survivable WDM transport networks</title>. , 2000, , .		6
79	Design and analysis of partial protection mechanisms in groomed optical WDM mesh networks. Journal of Optical Networking, 2008, 7, 617.	2.5	6
80	MICRONâ€"A Framework for Connection Establishment in Optical Networks. IEEE/ACM Transactions on Networking, 2008, 16, 473-485.	2.6	6
81	Utilization Aware Power Management in Reliable and Aggressive Chip Multi Processors. IEEE Transactions on Computers, 2016, 65, 979-991.	2.4	6
82	An Efficient Backup-Overloading for Fault-Tolerant Scheduling of Real-Time Tasks. Lecture Notes in Computer Science, 2000, , 1291-1295.	1.0	6
83	Performance Analysis of WDM Optical Networks with Wavelength Usage Constraint. Photonic Network Communications, 2003, 5, 137-146.	1.4	5
84	IEEE 1451 standard and wireless sensor networks: An over view of fault tolerant algorithms. , 2006, , .		5
85	Attack monitoring and localization in All-Optical Networks. Cluster Computing, 2006, 9, 465-473.	3.5	5
86	Dynamic Survivable Network Design for Path Level Traffic Grooming in WDM Optical Networks. , 2007, , .		5
87	Determining optimal light-trail length. , 2010, , .		5
88	Optical quorum cycles for efficient communication. Photonic Network Communications, 2016, 31, 196-205.	1.4	5
89	An efficient VLSI dictionary machine. Computer Architecture News, 1984, 12, 142-150.	2.5	5
90	Diagnosis in hybrid fault situations under aim and a unified t-characterization theorem. Computers and Mathematics With Applications, 1987, 13, 567-576.	1.4	4

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91	Synchronizing hypercube networks in the presence of faults. IEEE Transactions on Computers, 1994, 43, 1175-1183.	2.4	4
92	Superscalar and superpipelined microprocessor design, and simulation: a senior project. IEEE Transactions on Education, 1997, 40, 89-97.	2.0	4
93	Dynamic Wavelength Routing Techniques and their Performance Analyses. , 2002, , 247-272.		4
94	Blocking performance of fixed-paths least-congestion routing in multifibre WDM networks. International Journal of Communication Systems, 2002, 15, 143-159.	1.6	4
95	Optical paths supporting quorums for efficient communication. , 2014, , .		4
96	Bulk I/O Storage Management for Big Data Applications. , 2016, , .		4
97	Array Aware Training/Pruning: Methods for Efficient Forward Propagation on Array-based Neural Network Accelerators. , 2020, , .		4
98	Scaling Distributed All-Pairs Algorithms. Lecture Notes in Electrical Engineering, 2016, , 247-257.	0.3	4
99	The helical cube network. Networks, 1995, 26, 87-100.	1.6	3
100	Architecture technique trade-offs using mean memory delay time. IEEE Transactions on Computers, 1996, 45, 1089-1100.	2.4	3
101	<title>Performance/area tradeoffs in tree-based VLSI architectures for the two-dimensional wavelet transform</title>. , 1996, 2762, 621.		3
102	Multicasting in ATM networks using MINs. Computer Communications, 1996, 19, 712-722.	3.1	3
103	Fast recovery from database/link failures in mobile networks. Computer Communications, 2000, 23, 561-574.	3.1	3
104	Title is missing!. Journal of Supercomputing, 2000, 16, 27-52.	2.4	3
105	Optimal Distributed Location Management in Mobile Networks. Mobile Networks and Applications, 2001, 6, 117-124.	2.2	3
106	An Incentive Driven Lookup Protocol for Chord-Based Peer-to-Peer (P2P) Networks. Lecture Notes in Computer Science, 2004, , 8-18.	1.0	3
107	Non-arithmetic carry chains for reconfigurable fabrics. , 2007, , .		3
108	<title>Efficient protection and grooming architectures for future optical networks</title>. , 2009, , .		3

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109	Reconfigurable high-speed platform: shifting the paradigm in education, research and engineering. , 2012, 50, 153-159.		3
110	Meta-image navigation augmenters for unmanned aircraft systems (MINA for UAS). , 2013, , .		3
111	Reliability aware dynamic voltage and frequency scaling for improved microprocessor lifetime. Operating Systems Review (ACM), 2013, 47, 10-17.	1.5	3
112	Enhancing Fault Tolerance and Resource Utilization in Unidirectional Quorum-Based Cycle Routing. IEEE/ACM Transactions on Networking, 2018, 26, 934-947.	2.6	3
113	Cache write generate for parallel image processing on shared memory architectures. IEEE Transactions on Image Processing, 1996, 5, 1204-1208.	6.0	2
114	<title>Converter placement on wavelength-routed network paths</title>. , 1997, , .		2
115	Scheduling Algorithms with Fault Detection and Location Capabilities for Real-Time Multiprocessor Systems. Journal of Parallel and Distributed Computing, 1998, 51, 136-150.	2.7	2
116	Blocking performance of tree establishment in time-space switched optical networks. , 2001, , .		2
117	Partial Protection in Optical WDM Networks: Enhanced Support for Dynamic Traffic. , 2006, , .		2
118	A Comparative Study of Path Level Traffic Grooming Strategies for WDM Optical Networks with Dynamic Traffic - Invited Paper. , 2008, , .		2
119	Optimal Utilization with Fairness and Priority Considerations in Optical Networks Based on Light Trail. , 2009, , .		2
120	Greedy Dynamic Crossover Management in Hardware Accelerated Genetic Algorithm Implementations Using FPGA. , 2009, , .		2
121	Efficient multicasting approaches using collection-distribution networks. , 2011, , .		2
122	Enhancing fault tolerance capabilities in quorum-based cycle routing. , 2015, , .		2
123	Efficient Distributed All-Pairs Algorithms: Management Using Optimal Cyclic Quorums. IEEE Transactions on Parallel and Distributed Systems, 2018, 29, 391-404.	4.0	2
124	An Adaptive Scheme for Fault-Tolerant Scheduling of Soft Real-Time Tasks in Multiprocessor Systems. Lecture Notes in Computer Science, 2001, , 68-78.	1.0	2
125	Phased mission reliability analysis. Performance Evaluation Review, 1990, 18, 247-248.	0.4	1
126	<title>Proteus: a reconfigurable computational network for computer vision</title>. , 1992, , .		1

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127	Proteus: A reconfigurable computational network for computer vision. Machine Vision and Applications, 1995, 8, 85-100.	1.7	1
128	Reliability Modeling of Scheduled Maintenance Systems with Latent Failures. International Journal of Reliability, Quality and Safety Engineering, 1998, 05, 359-371.	0.4	1
129	Tradeoffs and Comparison of Restoration Strategies in Optical WDM Networks. , 2005, , 333-355.		1
130	Autonomous aero-visual and sensor based inspection network for asset monitoring. , 2009, , .		1
131	Scheduling linear network for space and time efficiency. , 2011, , .		1
132	Meta-image navigation augmenters for GPS denied mountain navigation of small UAS. , 2014, , .		1
133	Characterization of Mountain Drainage Patterns for GPS-Denied UAS Navigation Augmentation. , 2014, , .		1
134	Context-Aware Duplicate Detection in Semi-structured Data Streams. , 2014, , .		1
135	Resource efficient redundancy using quorum-based cycle routing in optical networks. , 2015, , .		1
136	Automatic Parallelization of GPU Applications Using OpenCL. , 2015, , .		1
137	SSCMSD - Single-Symbol Correction Multi-symbol Detection for DRAM Subsystem. , 2018, , .		1
138	Addressing multiple bit/symbol errors in DRAM subsystem. PeerJ Computer Science, 2021, 7, e359.	2.7	1
139	Establishing Efficient All One-to-One Paths by Exploring Cyclic Quorum Sets. , 2021, , .		1
140	Multicast Routing in Hierarchical Optical Networks Using Collection-Distribution Networks. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 283-301.	0.2	1
141	A Memory Efficient Parallel All-Pairs Computation Framework: Computation â€“ Communication Overlap. Lecture Notes in Computer Science, 2018, , 443-458.	1.0	1
142	LDM: Lineage-Aware Data Management in Multi-tier Storage Systems. Lecture Notes in Networks and Systems, 2020, , 683-707.	0.5	1
143	Analytical computation of Markov chain using PadÃ© approximations. Computers and Operations Research, 1994, 21, 661-675.	2.4	0
144	Free performance and fault tolerance (extended abstract). Performance Evaluation Review, 1995, 23, 60-61.	0.4	0

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145	Title is missing!. Mobile Networks and Applications, 2001, 6, 315-316.	2.2	0
146	Necessary and sufficient condition for crosstalk attack localization in all-optical networks. , 2002, , .		0
147	Utilizing node's selfishness for providing complete anonymity in peer-to-peer based grids. Multiagent and Grid Systems, 2006, 2, 11-27.	0.5	0
148	Reprogrammable high-speed platform : Bridging the gap between research, education and engineering. , 2008, , .		0
149	Fault tolerant multicast couple hop routing. , 2008, , .		0
150	AMES: A framework for fair bandwidth sharing. , 2009, , .		0
151	Thermal Aware Processor Operation Point Management. , 2012, , .		0
152	Runtime optimization utilizing program structure. , 2012, , .		0
153	Dynamic management of bursty traffic over multiple channels. , 2013, , .		0
154	Tree Matching Using Data Shaping. , 2015, , .		0
155	Unidirectional Quorum-Based Cycle Planning for Efficient Resource Utilization and Fault-Tolerance. , 2016, , .		0
156	LowLEAC: Low Leakage Energy Architecture for Caches. , 2017, , .		0
157	Low-Power High-Performance Adaptive Computing Architectures for Multimedia Processing. Lecture Notes in Computer Science, 2002, , 124-134.	1.0	0
158	Timing Issues of Operating Mode Switch in High Performance Reconfigurable Architectures. Lecture Notes in Computer Science, 2003, , 23-33.	1.0	0
159	Net-Centric Computing: The Future of Computers and Networking. Lecture Notes in Computer Science, 2006, , 14-26.	1.0	0
160	Survivable Traffic Grooming. Optical Networks Series, 2008, , 137-157.	1.1	0
161	Monitoring and Detecting Attacks in All-Optical Networks. , 2008, , 307-347.		0
162	Hierarchical Stochastic Reward Net Solver Package. Lecture Notes in Computer Science, 1998, , 369-373.	1.0	0

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163	Fast Document Similarity Computations using GPGPU. , 2018, , .		0
164	Maximizing Primary Capacities in Survivable Networks. , 0, , 158-180.		0
165	An Efficient Systematic Approach to Find All Cyclic Quorum Sets with All-pairs Property. , 2021, , .		0