Stefan Schmid

List of Publications by Year
in descending order

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169 papers	2,715 citations	279487 23 h-index	377514 34 g-index
178 all docs	178 docs citations	178 times ranked	1471 citing authors

#	Article	IF	Citations
1	Exploiting locality in distributed SDN control. , 2013, , .		138
2	Adaptable and Data-Driven Softwarized Networks: Review, Opportunities, and Challenges. Proceedings of the IEEE, 2019, 107, 711-731.	16.4	80
3	A distributed and robust SDN control plane for transactional network updates. , 2015, , .		79
4	Survey of Consistent Software-Defined Network Updates. IEEE Communications Surveys and Tutorials, 2019, 21, 1435-1461.	24.8	79
5	Provable data plane connectivity with local fast failover. , 2014, , .		65
6	Online Admission Control and Embedding of Service Chains. Lecture Notes in Computer Science, 2015, , 104-118.	1.0	64
7	Good Network Updates for Bad Packets. , 2014, , .		58
8	Scheduling Loop-free Network Updates. , 2015, , .		57
9	It's a Match!. Computer Communication Review, 2016, 46, 30-36.	1.5	49
10	A Self-repairing Peer-to-Peer System Resilient to Dynamic Adversarial Churn. Lecture Notes in Computer Science, 2005, , 13-23.	1.0	45
11	The Programmable Data Plane. ACM Computing Surveys, 2022, 54, 1-36.	16.1	44
12	SplayNet: Towards Locally Self-Adjusting Networks. IEEE/ACM Transactions on Networking, 2016, 24, 1421-1433.	2.6	41
13	A Survey of Fast-Recovery Mechanisms in Packet-Switched Networks. IEEE Communications Surveys and Tutorials, 2021, 23, 1253-1301.	24.8	41
14	Survey on Blockchain Networking. ACM Computing Surveys, 2022, 54, 1-34.	16.1	41
15	Incremental SDN deployment in enterprise networks. , 2013, , .		39
16	Characterizing the algorithmic complexity of reconfigurable data center architectures. , 2018, , .		39
17	Competitive and Fair Medium Access Despite Reactive Jamming. , 2011, , .		38
18	Toward demand-aware networking. Computer Communication Review, 2019, 48, 31-40.	1.5	38

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19	Transiently Secure Network Updates. , 2016, , .		36
20	Survey of Reconfigurable Data Center Networks. ACM SIGACT News, 2019, 50, 62-79.	0.1	36
21	Loop-Free Route Updates for Software-Defined Networks. IEEE/ACM Transactions on Networking, 2018, 26, 328-341.	2.6	35
22	An Approximation Algorithm for Path Computation and Function Placement in SDNs. Lecture Notes in Computer Science, 2016, , 374-390.	1.0	35
23	A Jamming-Resistant MAC Protocol for Multi-Hop Wireless Networks. Lecture Notes in Computer Science, 2010, , 179-193.	1.0	33
24	Beyond the Stars. Computer Communication Review, 2015, 45, 12-18.	1.5	31
25	Efficient Loop-Free Rerouting of Multiple SDN Flows. IEEE/ACM Transactions on Networking, 2018, 26, 948-961.	2.6	30
26	Stitching Inter-Domain Paths over IXPs. , 2016, , .		28
27	Demand-Aware Network Design with Minimal Congestion and Route Lengths. , 2019, , .		28
28	Kraken: Online and elastic resource reservations for multi-tenant datacenters. , 2016, , .		27
29	SKIP ⁺. Journal of the ACM, 2014, 61, 1-26.	1.8	26
30	On the Hardness and Inapproximability of Virtual Network Embeddings. IEEE/ACM Transactions on Networking, 2020, 28, 791-803.	2.6	26
31	A Survey of Reconfigurable Optical Networks. Optical Switching and Networking, 2021, 41, 100621.	1.2	26
32	Competitive and fair throughput for co-existing networks under adversarial interference. , 2012, , .		25
33	Towards Unified Programmability of Cloud and Carrier Infrastructure. , 2014, , .		25
34	The Wide-Area Virtual Service Migration Problem: A Competitive Analysis Approach. IEEE/ACM Transactions on Networking, 2014, 22, 165-178.	2.6	25
35	Virtual Network Embedding Approximations: Leveraging Randomized Rounding. IEEE/ACM Transactions on Networking, 2019, 27, 2071-2084.	2.6	25
36	Chronus: Consistent Data Plane Updates in Timed SDNs. , 2017, , .		24

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37	Scheduling Congestion- and Loop-Free Network Update in Timed SDNs. IEEE Journal on Selected Areas in Communications, 2017, 35, 2542-2552.	9.7	24
38	Charting the Complexity Landscape of Virtual Network Embeddings. , 2018, , .		24
39	Guest Editorial Scalability Issues and Solutions for Software Defined Networks. IEEE Journal on Selected Areas in Communications, 2018, 36, 2595-2602.	9.7	23
40	Approximate and incremental network function placement. Journal of Parallel and Distributed Computing, 2018, 120, 159-169.	2.7	23
41	How (Not) to Shoot in Your Foot with SDN Local Fast Failover. Lecture Notes in Computer Science, 2013, , 68-82.	1.0	23
42	SHEAR: A Highly Available and Flexible Network Architecture Marrying Distributed and Logically Centralized Control Planes. , 2015, , .		22
43	P-Rex. , 2018, , .		22
44	CASA: Congestion and Stretch Aware Static Fast Rerouting. , 2019, , .		22
45	PURR: a primitive for reconfigurable fast reroute. , 2019, , .		22
46	Speed Dating Despite Jammers. Lecture Notes in Computer Science, 2009, , 1-14.	1.0	22
47	Competitive and Deterministic Embeddings of Virtual Networks. Lecture Notes in Computer Science, 2012, , 106-121.	1.0	21
48	rDAN : Toward robust demand-aware network designs. Information Processing Letters, 2018, 133, 5-9.	0.4	21
49	Local Fast Failover Routing With Low Stretch. Computer Communication Review, 2018, 48, 35-41.	1.5	21
50	Runtime Verification of P4 Switches with Reinforcement Learning. , 2019, , .		21
51	Congestion-Free Rerouting of Multiple Flows in Timed SDNs. IEEE Journal on Selected Areas in Communications, 2019, 37, 968-981.	9.7	21
52	Deadline-Aware Multicast Transfers in Software-Defined Optical Wide-Area Networks. IEEE Journal on Selected Areas in Communications, 2020, 38, 1584-1599.	9.7	21
53	Toward Active and Passive Confidentiality Attacks on Cryptocurrency Off-chain Networks. , 2020, , .		21
54	Outsmarting Network Security with SDN Teleportation. , 2017, , .		20

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55	On the Complexity of Non-Segregated Routing in Reconfigurable Data Center Architectures. Computer Communication Review, 2019, 49, 2-8.	1.5	20
56	Online Balanced Repartitioning. Lecture Notes in Computer Science, 2016, , 243-256.	1.0	20
57	Competitive and deterministic embeddings of virtual networks. Theoretical Computer Science, 2013, 496, 184-194.	0.5	19
58	Competitive MAC under adversarial SINR. , 2014, , .		19
59	Distributed Self-Adjusting Tree Networks. , 2019, , .		19
60	P4Consist: Toward Consistent P4 SDNs. IEEE Journal on Selected Areas in Communications, 2020, 38, 1293-1307.	9.7	19
61	Cerberus. Proceedings of the ACM on Measurement and Analysis of Computing Systems, 2021, 5, 1-33.	1.4	19
62	TI-MFA: Keep calm and reroute segments fast. , 2018, , .		17
63	On the Complexity of Traffic Traces and Implications. Proceedings of the ACM on Measurement and Analysis of Computing Systems, 2020, 4, 1-29.	1.4	17
64	Self-stabilizing leader election for single-hop wireless networks despite jamming. , 2011, , .		16
65	Supporting Emerging Applications With Low-Latency Failover in P4. , 2018, , .		15
66	Parametrized complexity of virtual network embeddings. Computer Communication Review, 2019, 49, 3-10.	1.5	15
67	Toward Consistent SDNs: A Case for Network State Fuzzing. IEEE Transactions on Network and Service Management, 2020, 17, 668-681.	3.2	15
68	Software-Defined Reconfigurable Intelligent Surfaces: From Theory to End-to-End Implementation. Proceedings of the IEEE, 2022, 110, 1466-1493.	16.4	15
69	Towards higher-dimensional topological self-stabilization: A distributed algorithm for Delaunay graphs. Theoretical Computer Science, 2012, 457, 137-148.	0.5	14
70	It's About Time: On Optimal Virtual Network Embeddings under Temporal Flexibilities. , 2014, , .		14
71	Scheduling Congestion-Free Updates of Multiple Flows with Chronicle in Timed SDNs. , 2018, , .		14
72	Kraken: Online and Elastic Resource Reservations for Cloud Datacenters. IEEE/ACM Transactions on Networking, 2018, 26, 422-435.	2.6	13

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73	Locally Self-Adjusting Tree Networks. , 2013, , .		12
74	Virtual Network Embedding Approximations: Leveraging Randomized Rounding. , 2018, , .		12
75	Charting the Algorithmic Complexity of Waypoint Routing. Computer Communication Review, 2018, 48, 42-48.	1.5	12
76	Empirical Predictability Study of SDN Switches. , 2019, , .		12
77	Sade: competitive MAC under adversarial SINR. Distributed Computing, 2018, 31, 241-254.	0.7	11
78	Polynomial-Time What-If Analysis for Prefix-Manipulating MPLS Networks. , 2018, , .		11
79	Renaissance: A Self-Stabilizing Distributed SDN Control Plane. , 2018, , .		11
80	Distributed Dominating Set Approximations beyond Planar Graphs. ACM Transactions on Algorithms, 2019, 15, 1-18.	0.9	11
81	Bonsai: Efficient Fast Failover Routing Using Small Arborescences. , 2019, , .		11
82	AirNet: Energy-Aware Deployment and Scheduling of Aerial Networks. IEEE Transactions on Vehicular Technology, 2020, 69, 12252-12263.	3.9	11
83	AalWiNes. , 2020, , .		11
84	SOK. , 2020, , .		11
85	Empirical evaluation of nodes and channels of the lightning network. Pervasive and Mobile Computing, 2022, 83, 101584.	2.1	11
86	Inter-Datacenter Bulk Transfers: Trends and Challenges. IEEE Network, 2020, 34, 240-246.	4.9	10
87	Fast ReRoute on Programmable Switches. IEEE/ACM Transactions on Networking, 2021, 29, 637-650.	2.6	10
88	Survey on Algorithms for Self-stabilizing Overlay Networks. ACM Computing Surveys, 2021, 53, 1-24.	16.1	10
89	A Note on the Parallel Runtime of Self-Stabilizing Graph Linearization. Theory of Computing Systems, 2014, 55, 110-135.	0.7	9
90	Ahab: Data-Driven Virtual Cluster Hunting. , 2018, , .		9

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91	Transiently Policy-Compliant Network Updates. IEEE/ACM Transactions on Networking, 2018, 26, 2569-2582.	2.6	9
92	Efficient Non-Segregated Routing for Reconfigurable Demand-Aware Networks. , 2019, , .		9
93	Improved Fast Rerouting Using Postprocessing. , 2019, , .		9
94	Load-Optimal Local Fast Rerouting for Dense Networks. IEEE/ACM Transactions on Networking, 2018, 26, 2583-2597.	2.6	8
95	Demand-aware network designs of bounded degree. Distributed Computing, 2020, 33, 311-325.	0.7	8
96	Efficient non-segregated routing for reconfigurable demand-aware networks. Computer Communications, 2020, 164, 138-147.	3.1	8
97	Latte. Performance Evaluation Review, 2021, 48, 14-26.	0.4	8
98	On the Benefits of Joint Optimization of Reconfigurable CDN-ISP Infrastructure. IEEE Transactions on Network and Service Management, 2022, 19, 158-173.	3.2	8
99	Online Aggregation of the Forwarding Information Base: Accounting for Locality and Churn. IEEE/ACM Transactions on Networking, 2018, 26, 591-604.	2.6	7
100	The show must go on: Fundamental data plane connectivity services for dependable SDNs. Computer Communications, 2018, 116, 172-183.	3.1	6
101	On the Power of Preprocessing in Decentralized Network Optimization. , 2019, , .		6
102	Dynamic Balanced Graph Partitioning. SIAM Journal on Discrete Mathematics, 2020, 34, 1791-1812.	0.4	6
103	Chameleon. , 2020, , .		6
104	Load-Optimal Local Fast Rerouting for Resilient Networks. , 2017, , .		5
105	Competitive clustering of stochastic communication patterns on a ring. Computing (Vienna/New) Tj ETQq1 1 0.784314 rgBT /Overloc	3.2	5
106	RoSCo: Robust Updates for Software-Defined Networks. IEEE Journal on Selected Areas in Communications, 2020, 38, 1352-1365.	9.7	5
107	Load-Optimization in Reconfigurable Networks. Performance Evaluation Review, 2021, 48, 39-44.	0.4	5
108	Walking Through Waypoints. Lecture Notes in Computer Science, 2018, , 37-51.	1.0	5

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109	How Hard Can It Be?: Understanding the Complexity of Replica Aware Virtual Cluster Embeddings. , 2015, , .		4
110	Ismael: Using Machine Learning to Predict Acceptance of Virtual Clusters in Data Centers. IEEE Transactions on Network and Service Management, 2019, 16, 950-964.	3.2	4
111	A Constant Approximation for Maximum Throughput Multicommodity Routing And Its Application to Delay-Tolerant Network Scheduling. , 2019, , .		4
112	Incentivizing stable path selection in future Internet architectures. Performance Evaluation, 2020, 144, 102137.	0.9	4
113	Optimal Online Balanced Graph Partitioning. , 2021, , .		4
114	Demand Matrix Optimization for Offchain Payments in Blockchain. , 2021, , .		4
115	Grafting Arborescences for Extra Resilience of Fast Rerouting Schemes. , 2021, , .		4
116	Improved scalability of demand-aware datacenter topologies with minimal route lengths and congestion. Performance Evaluation, 2021, , 102238.	0.9	4
117	Competitive Clustering of Stochastic Communication Patterns on a Ring. Lecture Notes in Computer Science, 2017, , 231-247.	1.0	4
118	A Walk in the Clouds: Routing Through VNFs on Bidirected Networks. Lecture Notes in Computer Science, 2018, , 11-26.	1.0	4
119	Efficient non-segregated routing for reconfigurable demand-aware networks. , 2019, , .		4
120	Fast and Heavy Disjoint Weighted Matchings for Demand-Aware Datacenter Topologies. , 2022, , .		4
121	OBST: A self-adjusting peer-to-peer overlay based on multiple BSTs. , 2013, , .		3
122	Tomographic Node Placement Strategies and the Impact of the Routing Model. , 2018, , .		3
123	Working Set Theorems for Routing in Self-Adjusting Skip List Networks. , 2020, , .		3
124	Improved Fast Rerouting Using Postprocessing. IEEE Transactions on Dependable and Secure Computing, 2022, 19, 537-550.	3.7	3
125	Guest Editorial Leveraging Machine Learning in SDN/NFV-Based Networks. IEEE Journal on Selected Areas in Communications, 2020, 38, 245-247.	9.7	3
126	Walking Through Waypoints. Algorithmica, 2020, 82, 1784-1812.	1.0	3

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127	Online Dynamic B-Matching. Performance Evaluation Review, 2021, 48, 99-108.	0.4	3
128	Fix with P6: Verifying Programmable Switches at Runtime. , 2021, , .		3
129	CBNet: Minimizing Adjustments in Concurrent Demand-Aware Tree Networks. , 2021, , .		3
130	LightPIR: Privacy-Preserving Route Discovery for Payment Channel Networks. , 2021, , .		3
131	Demand-Aware Plane Spanners of Bounded Degree. , 2021, , .		3
132	On the Complexity of Weight-Dynamic Network Algorithms. , 2021, , .		3
133	On Search Friction of Route Discovery in Offchain Networks. , 2020, , .		3
134	Self-adjusting Linear Networks. Lecture Notes in Computer Science, 2019, , 368-382.	1.0	3
135	Dynamically Optimal Self-adjusting Single-Source Tree Networks. Lecture Notes in Computer Science, 2020, , 143-154.	1.0	3
136	Demand-Aware Network Design With Minimal Congestion and Route Lengths. IEEE/ACM Transactions on Networking, 2022, 30, 1838-1848.	2.6	3
137	Optimizing multicast flows in high-bandwidth reconfigurable datacenter networks. Journal of Network and Computer Applications, 2022, 203, 103399.	5.8	3
138	Lazy Self-Adjusting Bounded-Degree Networks for the Matching Model. , 2022, , .		3
139	Data locality and replica aware virtual cluster embeddings. Theoretical Computer Science, 2017, 697, 37-57.	0.5	2
140	perfbench. , 2018, , .		2
141	Waypoint Routing in Special Networks. , 2018, , .		2
142	Guest Editorsâ€™ Introduction: Special Section on Novel Techniques for Managing Softwarized Networks. IEEE Transactions on Network and Service Management, 2018, 15, 1192-1196.	3.2	2
143	Local Fast Rerouting with Low Congestion: A Randomized Approach. , 2019, , .		2
144	Distributed Consistent Network Updates in SDNs: Local Verification for Global Guarantees. , 2019, , .		2

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145	An axiomatic perspective on the performance effects of end-host path selection. Performance Evaluation, 2021, 151, 102233.	0.9	2
146	Local Fast Rerouting With Low Congestion: A Randomized Approach. IEEE/ACM Transactions on Networking, 2022, 30, 2403-2418.	2.6	2
147	Push-Down Trees: Optimal Self-Adjusting Complete Trees. IEEE/ACM Transactions on Networking, 2022, 30, 2419-2432.	2.6	2
148	DeepMPLS: fast analysis of MPLS configurations using deep learning. , 2019, , .		1
149	Nap: Network-Aware Data Partitions for Efficient Distributed Processing. , 2019, , .		1
150	Breeding Unicorns: Developing Trustworthy and Scalable Randomness Beacons. , 2019, , .		1
151	On Polynomial-Time Congestion-Free Software-Defined Network Updates. , 2019, , .		1
152	Guest Editorial: Special Issue on Latest Developments for the Management of Softwarized Networks. IEEE Transactions on Network and Service Management, 2019, 16, 1297-1302.	3.2	1
153	Breeding unicorns: Developing trustworthy and scalable randomness beacons. PLoS ONE, 2020, 15, e0232261.	1.1	1
154	Preacher: Network Policy Checker for Adversarial Environments. IEEE/ACM Transactions on Networking, 2021, 29, 2087-2100.	2.6	1
155	Enabling Novel Interconnection Agreements with Path-Aware Networking Architectures. , 2021, , .		1
156	It's Good to Relax: Fast Profit Approximation for Virtual Networks with Latency Constraints. , 2021, , .		1
157	Optimal Virtual Network Embeddings for Tree Topologies. , 2021, , .		1
158	Distributed Self-Adjusting Tree Networks. IEEE Transactions on Cloud Computing, 2023, 11, 716-729.	3.1	1
159	Automata-Theoretic Approach to Verification of MPLS Networks Under Link Failures. IEEE/ACM Transactions on Networking, 2022, 30, 766-781.	2.6	1
160	On Efficient Oblivious Wavelength Assignments for Programmable Wide-Area Topologies. , 2021, , .		1
161	Approximate Dynamic Balanced Graph Partitioning. , 2022, , .		1
162	The Grand CRU Challenge. , 2017, , .		0

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163	DeepMPLS: Fast Analysis of MPLS Configurations Using Deep Learning. , 2019, , .		0
164	On the Impact of the Network Hypervisor on Virtual Network Performance. , 2019, , .		0
165	On the Implications of Routing Models on Network Optimization. IEEE Transactions on Network and Service Management, 2021, , 1-1.	3.2	0
166	Area Convergence of Monoculus Robots With Additional Capabilities. Computer Journal, 0, , .	1.5	0
167	CacheNet: Leveraging the principle of locality in reconfigurable network design. Computer Networks, 2022, 204, 108648.	3.2	0
168	An Axiomatic Perspective on the Performance Effects of End-Host Path Selection. Performance Evaluation Review, 2022, 49, 16-17.	0.4	0
169	Improved Scalability of Demand-Aware Datacenter Topologies With Minimal Route Lengths and Congestion. Performance Evaluation Review, 2022, 49, 35-36.	0.4	0