Kai Nagel

List of Publications by Citations

116 papers	6,313 citations	32 h-index	78 g-index
118 ext. papers	7,197 ext. citations	2.5 avg, IF	6.01 L-index

#	Paper	IF	Citations
116	A cellular automaton model for freeway traffic. *Journal De Physique, I*, **1992**, 2, 2221-2229		2189
115	Discrete stochastic models for traffic flow. *Physical Review E*, **1995**, 51, 2939-2949	2.4	365
114	Two-lane traffic rules for cellular automata: A systematic approach. *Physical Review E*, **1998**, 58, 1425-1437		338
113	Two lane traffic simulations using cellular automata. *Physica A: Statistical Mechanics and Its Applications*, **1996**, 231, 534-550	3.3	285
112	Particle hopping models and traffic flow theory. *Physical Review E*, **1996**, 53, 4655-4672	2.4	246
111	Emergent traffic jams. *Physical Review E*, **1995**, 51, 2909-2918	2.4	238
110	Still Flowing: Approaches to Traffic Flow and Traffic Jam Modeling. *Operations Research*, **2003**, 51, 681-710		208
109	Parallel implementation of the TRANSIMS micro-simulation. *Parallel Computing*, **2001**, 27, 1611-1639	1	155
108	Deterministic models for traffic jams. *Physica A: Statistical Mechanics and Its Applications*, **1993**, 199, 254-269		153
107	Realistic multi-lane traffic rules for cellular automata. *Physica A: Statistical Mechanics and Its Applications*, **1997**, 234, 687-698	3.3	145
106	Generating complete all-day activity plans with genetic algorithms. *Transportation*, **2005**, 32, 369-397	4	129
105	The representation and implementation of time-dependent inundation in large-scale microscopic evacuation simulations. *Transportation Research Part C: Emerging Technologies*, **2010**, 18, 84-98	8.4	97
104	"Last-Mile" preparation for a potential disaster Ⅱnterdisciplinary approach towards tsunami early warning and an evacuation information system for the coastal city of Padang, Indonesia. *Natural Hazards and Earth System Sciences*, **2009**, 9, 1509-1528	3.9	86
103	An Agent-Based Microsimulation Model of Swiss Travel: First Results. *Networks and Spatial Economics*, **2003**, 3, 23-41	1.9	81
102	Agent-Based Demand-Modeling Framework for Large-Scale Microsimulations		67
101	The MATSim Open Berlin Scenario: A multimodal agent-based transport simulation scenario based on synthetic demand modeling and open data. *Procedia Computer Science*, **2019**, 151, 870-877	1.6	57
100	Bayesian Demand Calibration for Dynamic Traffic Simulations. *Transportation Science*, **2011**, 45, 541-561	4.4	57

99	Simplified cellular automaton model for city traffic. *Physical Review E*, **1998**, 58, 1286-1295	2.4	56
98	Large-scale multi-agent transportation simulations. *Computer Physics Communications*, **2002**, 147, 559-564	4.2	53
97	Dynamic traffic assignment on parallel computers in TRANSIMS. *Future Generation Computer Systems*, **2001**, 17, 637-648	7.5	52
96	Robustness of Efficient Passenger Boarding Strategies for Airplanes. *Transportation Research Record*, **2005**, 1915, 44-54	1.7	50
95	Agent-Based Demand-Modeling Framework for Large-Scale Microsimulations. *Transportation Research Record*, **2006**, 1985, 125-134	1.7	45
94	Microscopic traffic modeling on parallel high performance computers. *Parallel Computing*, **1994**, 20, 125-146	1.1	42
93	Agent-Oriented Coupling of Activity-Based Demand Generation with Multiagent Traffic Simulation. *Transportation Research Record*, **2007**, 2021, 10-17	1.7	41
92	The physics of traffic and regional development. *Contemporary Physics*, **2004**, 45, 405-426	3.3	40
91	Self-organizing criticality in cloud formation?. *Physica A: Statistical Mechanics and Its Applications*, **1992**, 182, 519-531	3.3	40
90	Integrating CEMDAP and MATSIM to Increase the Transferability of Transport Demand Models. *Transportation Research Record*, **2015**, 2493, 117-125	1.7	38
89	Behavioral Calibration and Analysis of a Large-Scale Travel Microsimulation. *Networks and Spatial Economics*, **2012**, 12, 481-502	1.9	37
88	Event-Driven Queue-Based Traffic Flow Microsimulation. *Transportation Research Record*, **2007**, 2003, 35-40	1.7	36
87	SIMPLE QUEUEING MODEL APPLIED TO THE CITY OF PORTLAND. *International Journal of Modern Physics C*, **1999**, 10, 941-960	1.1	35
86	Iterative route planning for large-scale modular transportation simulations. *Future Generation Computer Systems*, **2004**, 20, 1101-1118	7.5	34
85	Incorporating a multiple discrete-continuous outcome in the generalized heterogeneous data model: Application to residential self-selection effects analysis in an activity time-use behavior model. *Transportation Research Part B: Methodological*, **2016**, 91, 52-76	7.2	32
84	The Role of Spatial Interaction in Social Networks. *Networks and Spatial Economics*, **2013**, 13, 255-282	1.9	32
83	Comment on Critical behavior of a traffic flow model. *Physical Review E*, **2000**, 61, 3270-3271	2.4	32
82	Risk reduction at the Last-Mile an attempt to turn science into action by the example of Padang, Indonesia. *Natural Hazards*, **2013**, 65, 915-945	3	30

81	Introducing non-normality of latent psychological constructs in choice modeling with an application to bicyclist route choice. *Transportation Research Part B: Methodological*, **2015**, 78, 341-363	7.2	28
80	An activity-based and dynamic approach to calculate road traffic noise damages. *Transportation Research, Part D: Transport and Environment*, **2017**, 54, 335-347	6.4	26
79	Probabilistic Traffic Flow Breakdown in Stochastic Car-Following Models. *Transportation Research Record*, **2003**, 1852, 152-158	1.7	25
78	Mobility traces and spreading of COVID-19		25
77	Towards High-Resolution First-Best Air Pollution Tolls. *Networks and Spatial Economics*, **2016**, 16, 175-198	1.9	24
76	From Particle Hopping Models to Traffic Flow Theory. *Transportation Research Record*, **1998**, 1644, 1-9	1.7	24
75	An Elegant and Computationally Efficient Approach for Heterogeneous Traffic Modelling Using Agent Based Simulation. *Procedia Computer Science*, **2015**, 52, 962-967	1.6	23
74	Integrating explicit parking search into a transport simulation. *Procedia Computer Science*, **2017**, 109, 881-886	1.6	20
73	Electrification of Urban Freight Transport - a Case Study of the Food Retailing Industry. *Procedia Computer Science*, **2020**, 170, 757-763	1.6	18
72	Towards an Agent-based, Integrated Land-use Transport Modeling System. *Procedia Computer Science*, **2016**, 83, 958-963	1.6	17
71	Simulation-based optimization of service areas for pooled ride-hailing operators. *Procedia Computer Science*, **2018**, 130, 816-823	1.6	17
70	Income-contingent user preferences in policy evaluation: application and discussion based on multi-agent transport simulations. *Transportation*, **2011**, 38, 849-870	4	16
69	Network breakdown åt the edge of chaosïn multi-agent traffic simulations. *European Physical Journal B*, **2008**, 63, 321-327	1.2	15
68	Spatial competition and price formation. *Physica A: Statistical Mechanics and Its Applications*, **2000**, 287, 546-562	3.3	14
67	Accessibility in a Post-Apartheid City: Comparison of Two Approaches for Accessibility Computations. *Networks and Spatial Economics*, **2018**, 18, 241-271	1.9	14
66	A Simulation-based Approach for Constructing All-day Travel Chains from Mobile Phone Data. *Procedia Computer Science*, **2015**, 52, 468-475	1.6	13
65	Comparing traffic flow models with different number of ïhasesï *European Physical Journal B*, **2008**, 63, 315-320	1.2	13
64	Integrated Approach for the Assessment of Strategies for the Decarbonization of Urban Traffic. *Sustainability*, **2021**, 13, 839	3.6	13

63	Insights into a spatially embedded social network from a large-scale snowball sample. *European Physical Journal B*, **2011**, 84, 549-561	1.2	12
62	Maintaining Mobility in Substantial Urban Growth Futures. *Transportation Research Procedia*, **2016**, 19, 70-80	2.4	11
61	Implementing an adaptive traffic signal control algorithm in an agent-based transport simulation. *Procedia Computer Science*, **2018**, 130, 894-899	1.6	11
60	User-specific and Dynamic Internalization of Road Traffic Noise Exposures. *Networks and Spatial Economics*, **2017**, 17, 153-172	1.9	10
59	Simultaneous internalization of traffic congestion and noise exposure costs. *Transportation*, **2018**, 45, 1579-1600	4	10
58	Heterogeneous Tolls and Values of Time in Multi-agent Transport Simulation. *Procedia Computer Science*, **2014**, 32, 762-768	1.6	10
57	Modeling bicycle traffic in an agent-based transport simulation. *Procedia Computer Science*, **2017**, 109, 923-928	1.6	10
56	Simulation of Urban Traffic Control: A Queue Model Approach. *Procedia Computer Science*, **2012**, 10, 808-814	1.6	10
55	Bicycle traffic and its interaction with motorized traffic in an agent-based transport simulation framework. *Future Generation Computer Systems*, **2019**, 97, 30-40	7.5	10
54	How Driving Multiple Tours Affects the Results of Last Mile Delivery Vehicle Routing Problems. *Procedia Computer Science*, **2019**, 151, 840-845	1.6	9
53	Towards welfare optimal operation of innovative mobility concepts: External cost pricing in a world of shared autonomous vehicles. *Transportation Research, Part A: Policy and Practice*, **2020**, 136, 48-63	3.7	9
52	Braess's Paradox in an Agent-based Transport Model. *Procedia Computer Science*, **2016**, 83, 946-951	1.6	9
51	Mind the price gap: How optimal emission pricing relates to the EU CO2 reduction targets. *International Journal of Sustainable Transportation*, **2019**, 13, 378-391	3.6	9
50	Passenger Agent and Paratransit Operator Reaction to Changes of Service Frequency of a Fixed Train Line. *Procedia Computer Science*, **2013**, 19, 803-808	1.6	9
49	A Model of Risk-Sensitive Route-Choice Behavior and the Potential Benefit of Route Guidance. *IEEE Transactions on Intelligent Transportation Systems*, **2011**, 12, 384-389	6.1	9
48	Adding Mode Choice to Multiagent Transport Simulation. *Transportation Research Record*, **2009**, 2132, 50-58	1.7	9
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46	Adaptive traffic signal control for real-world scenarios in agent-based transport simulations. *Transportation Research Procedia*, **2019**, 37, 481-488	2.4	8

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44	The impact of pricing and service area design on the modal shift towards demand responsive transit. *Procedia Computer Science*, **2020**, 170, 807-812	1.6	8
43	Incorporating within link dynamics in an agent-based computationally faster and scalable queue model. *Transportmetrica A: Transport Science*, **2018**, 14, 520-541	2.5	8
42	Predicting the effects of COVID-19 related interventions in urban settings by combining activity-based modelling, agent-based simulation, and mobile phone data. *PLoS ONE*, **2021**, 16, e0259037	3.7	7
41	Automatic calibration of agent-based public transit assignment path choice to count data. *Transportation Research Part C: Emerging Technologies*, **2016**, 64, 58-71	8.4	7
40	Using a Route-based and Vehicle Type specific Range Constraint for Improving Vehicle Routing Problems with Electric Vehicles. *Transportation Research Procedia*, **2021**, 52, 517-524	2.4	7
39	Optimization and simulation of fixed-time traffic signal control in real-world applications. *Procedia Computer Science*, **2019**, 151, 826-833	1.6	6
38	Studying the Accuracy of Demand Generation from Mobile Phone Trajectories with Synthetic Data. *Procedia Computer Science*, **2014**, 32, 802-807	1.6	6
37	Activity-Based Computation of Marginal Noise Exposure Costs: Implications for Traffic Management. *Transportation Research Record*, **2016**, 2597, 116-122	1.7	6
36	Agent-based Congestion Pricing and Transport Routing with Heterogeneous Values of Travel Time Savings. *Procedia Computer Science*, **2016**, 83, 908-913	1.6	6
35	Large-Scale Assignment of Congested Bicycle Traffic Using Speed Heterogeneous Agents. *Procedia Computer Science*, **2019**, 151, 820-825	1.6	5
34	Agent-based Modelling and Simulation of Air Transport Technology. *Procedia Computer Science*, **2013**, 19, 821-828	1.6	5
33	Extensible Software Design of a Multi-Agent Transport Simulation. *Procedia Computer Science*, **2013**, 19, 380-388	1.6	5
32	Increased Convergence Rates in Multiagent Transport Simulations with Pseudosimulation. *Transportation Research Record*, **2013**, 2343, 68-76	1.7	5
31	Virtual Worlds—Real Decisions: Model- and Visualization-based Tools for Landscape Planning in Switzerland. *Mountain Research and Development*, **2008**, 28, 122-127	1.4	5
30	The importance of timescales: simple models for economic markets. *Physica A: Statistical Mechanics and Its Applications*, **2004**, 340, 668-677	3.3	5
29	Q-Learning for Flexible Learning of Daily Activity Plans. *Transportation Research Record*, **2005**, 1935, 163-169	1.9	5
28	Using mobile phone data for epidemiological simulations of lockdowns: government interventions, behavioral changes, and resulting changes of reinfections		5

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27	Predicting the effects of COVID-19 related interventions in urban settings by combining activity-based modelling, agent-based simulation, and mobile phone data		5
26	Calibration of choice model parameters in a transport scenario with heterogeneous traffic conditions and income dependency. *Transportation Letters*, **2020**, 12, 441-450	2.1	5
25	Integrated Analysis of Commuters Energy Consumption. *Procedia Computer Science*, **2014**, 32, 699-706	1.6	4
24	Policy Evaluation in Multiagent Transport Simulations. *Transportation Research Record*, **2010**, 2175, 10-18	1.7	4
23	PRELIMINARY RESULTS OF A MULTIAGENT TRAFFIC SIMULATION FOR BERLIN. *International Journal of Modeling, Simulation, and Scientific Computing*, **2007**, 10, 289-307	0.8	4
22	Mind the Gap Passenger Arrival Patterns in Multi-agent Simulations. *International Journal of Transportation*, **2016**, 4, 27-40		4
21	Within-Day Replanning **2016**, 187-200		4
20	The end of travel time matrices: Individual travel times in integrated land use/transport models. *Journal of Transport Geography*, **2020**, 88, 102862	5.2	4
19	Using real-world traffic incident data in transport modeling. *Procedia Computer Science*, **2018**, 130, 880-885	1.6	4
18	Flows Over Time as Continuous Limits of Packet-Based Network Simulations. *Transportation Research Procedia*, **2021**, 52, 123-130	2.4	4
17	The effect of unexpected disruptions and information times on public transport passengers: a simulation study. *Procedia Computer Science*, **2020**, 170, 745-750	1.6	3
16	Prediction of Covid-19 spreading and optimal coordination of counter-measures: From microscopic to macroscopic models to Pareto fronts. *PLoS ONE*, **2021**, 16, e0249676	3.7	3
15	Electrification of Urban Waste Collection: Introducing a Simulation-Based Methodology for Technical Feasibility, Impact and Cost Analysis. *World Electric Vehicle Journal*, **2021**, 12, 122	2.5	3
14	Zellularautomaten simulieren Straßenverkehr. *Physik Journal*, **1996**, 52, 460-462		2
13	Hell on Wheels. *The Sciences*, **1999**, 39, 26-31		2
12	An efficient approach to create agent-based transport simulation scenarios based on ubiquitous Big Data and a new, aspatial activity-scheduling model. *Transportation Research Procedia*, **2021**, 52, 613-620	2.4	2
11	The structure of user equilibria: Dynamic coevolutionary simulations vs. cyclically expanded networks. *Procedia Computer Science*, **2017**, 109, 648-655	1.6	1
10	A Message-Based Framework for Real-World Mobility Simulations **2005**, 193-209		1

9	Using MATSim as a Component in Dynamic Agent-Based Micro-Simulations. *Lecture Notes in Computer Science*, **2020**, 85-105	0.9	1
8	Toward identifying the critical mass in spatial two-sided markets. *Environment and Planning B: Urban Analytics and City Science*, **2020**, 47, 1704-1724	2	1
7	Combining Simulation and Optimisation to Design Reliable Transportation Services with Autonomous Fleets. *Transportation Research Procedia*, **2021**, 52, 59-66	2.4	1
6	Realistic agent-based simulation of infection dynamics and percolation. *Physica A: Statistical Mechanics and Its Applications*, **2021**, 584, 126322	3.3	1
5	Expanding the analysis scope of a MATSim transport simulation by integrating the FEATHERS activity-based demand model. *Procedia Computer Science*, **2021**, 184, 753-760	1.6	0
4	Enhanced Emission Calculation for Freight Transport. *Procedia Computer Science*, **2022**, 201, 601-607	1.6	0
3	Simulation-based investigation of transport scenarios for Hamburg. *Procedia Computer Science*, **2022**, 201, 587-593	1.6	0
2	Creating an agent-based long-haul freight transport model for Germany. *Procedia Computer Science*, **2022**, 201, 614-620	1.6	0
1	Improving speed and realism of an evolutionary minibus network design process. *Procedia Computer Science*, **2019**, 151, 834-839	1.6	