Samuel Coogan

List of Publications by Year
in descending order

91 papers	1,796 citations	623574 14 h-index	642610 23 g-index
91 all docs	91 docs citations	91 times ranked	856 citing authors

#	Article	IF	Citations
1	Control Barrier Functions: Theory and Applications. , 2019, , .		650
2	Scaling the size of a formation using relative position feedback. Automatica, 2012, 48, 2677-2685.	3.0	79
3	Efficient finite abstraction of mixed monotone systems. , 2015, , .		73
4	A Compartmental Model for Traffic Networks and Its Dynamical Behavior. IEEE Transactions on Automatic Control, 2015, 60, 2698-2703.	3.6	63
5	Control of Multi-Agent Systems with Finite Time Control Barrier Certificates and Temporal Logic. , 2018, , .		53
6	A learning based approach to control synthesis of Markov decision processes for linear temporal logic specifications. , 2014, , .		52
7	Traffic Network Control From Temporal Logic Specifications. IEEE Transactions on Control of Network Systems, 2016, 3, 162-172.	2.4	46
8	Synthesis of Control Barrier Functions Using a Supervised Machine Learning Approach. , 2020, , .		46
9	Stability of traffic flow networks with a polytree topology. Automatica, 2016, 66, 246-253.	3.0	39
10	A barrier function approach to finite-time stochastic system verification and control. Automatica, 2021, 125, 109439.	3.0	35
11	A Dissipativity Approach to Safety Verification for Interconnected Systems. IEEE Transactions on Automatic Control, 2015, 60, 1722-1727.	3.6	34
12	Capacity modeling and routing for traffic networks with mixed autonomy. , 2017, , .		29
13	Control of Mobile Robots Using Barrier Functions Under Temporal Logic Specifications. IEEE Transactions on Robotics, 2021, 37, 363-374.	7.3	28
14	Formal Methods for Control of Traffic Flow: Automated Control Synthesis from Finite-State Transition Models. IEEE Control Systems, 2017, 37, 109-128.	1.0	26
15	Traffic predictive control from low-rank structure. Transportation Research Part B: Methodological, 2017, 97, 1-22.	2.8	25
16	Mixed Monotonicity for Reachability and Safety in Dynamical Systems. , 2020, , .		25
17	Energy management via pricing in LQ dynamic games. , 2013, , .		24
18	Tight Decomposition Functions for Continuous-Time Mixed-Monotone Systems With Disturbances. , 2021, 5, 139-144.		23

#	Article	IF	Citations
19	Dynamical properties of a compartmental model for traffic networks. , 2014, , .		20
20	A contractive approach to separable Lyapunov functions for monotone systems. Automatica, 2019, 106, 349-357.	3.0	20
21	Management of intersections with multi-modal high-resolution data. Transportation Research Part C: Emerging Technologies, 2016, 68, 101-112.	3.9	18
22	Freeway traffic control from linear temporal logic specifications. , 2014, , .		17
23	Specification-Guided Verification and Abstraction Refinement of Mixed Monotone Stochastic Systems. IEEE Transactions on Automatic Control, 2021, 66, 2975-2990.	3.6	16
24	Routing for Traffic Networks With Mixed Autonomy. IEEE Transactions on Automatic Control, 2021, 66, 2664-2676.	3.6	16
25	Sampled-Data Reachability Analysis Using Sensitivity and Mixed-Monotonicity. , 2018, 2, 761-766.		15
26	Verification and Control for Finite-Time Safety of Stochastic Systems via Barrier Functions. , 2019, , .		15
27	Multi-Agent Task Allocation using Cross-Entropy Temporal Logic Optimization. , 2020, , .		15
28	Offset optimization in signalized traffic networks via semidefinite relaxation. Transportation Research Part B: Methodological, 2017, 100, 82-92.	2.8	14
29	Finite abstraction of mixed monotone systems with discrete and continuous inputs. Nonlinear Analysis: Hybrid Systems, 2017, 23, 254-271.	2.1	14
30	Mixed monotonicity of partial first-in-first-out traffic flow models. , 2016, , .		13
31	Efficient Verification for Stochastic Mixed Monotone Systems. , 2018, , .		12
32	Computing Robustly Forward Invariant Sets for Mixed-Monotone Systems. , 2020, , .		12
33	Controlling a network of signalized intersections from temporal logical specifications. , 2015, , .		11
34	Characterizing Safety: Minimal Control Barrier Functions From Scalar Comparison Systems. , 2021, 5, 523-528.		11
35	Multi-Level Electric Vehicle Charging Facilities with Limited Resources. IFAC-PapersOnLine, 2020, 53, 15428-15433.	0.5	11
36	Abstraction-based synthesis for stochastic systems with omega-regular objectives. Nonlinear Analysis: Hybrid Systems, 2022, 45, 101204.	2.1	11

#	Article	IF	Citations
37	Scaling the size of a multiagent formation via distributed feedback. , 2011, , .		10
38	The Price of Anarchy for Transportation Networks with Mixed Autonomy*. , 2018, , .		10
39	Optimal Tolling for Heterogeneous Traffic Networks with Mixed Autonomy. , 2019, , .		10
40	Enforcing Safety at Runtime for Systems with Disturbances. , 2020, , .		9
41	Pricing in linear-quadratic dynamic games. , 2012, , .		8
42	Koopman Operator Approach for Instability Detection and Mitigation in Signalized Traffic. , 2018, , .		7
43	Mixed Autonomy in Ride-Sharing Networks. IEEE Transactions on Control of Network Systems, 2020, 7, 1940-1950.	2.4	7
44	Koopman Operator Applications in Signalized Traffic Systems. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 3214-3225.	4.7	7
45	Extent-compatible control barrier functions. Systems and Control Letters, 2021, 150, 104895.	1.3	7
46	Guard synthesis for safety of hybrid systems using sum of squares programming. , 2012, , .		6
47	Separability of Lyapunov functions for contractive monotone systems. , 2016, , .		6
48	Improving the Fidelity of Mixed-Monotone Reachable Set Approximations via State Transformations. , 2021, , .		6
49	A Sequential Composition Framework for Coordinating Multirobot Behaviors. IEEE Transactions on Robotics, 2021, 37, 864-876.	7.3	6
50	Safe Learning for Uncertainty-Aware Planning via Interval MDP Abstraction. , 2022, 6, 2641-2646.		6
51	Safety from Fast, In-the-Loop Reachability with Application to UAVs. , 2022, , .		6
52	Formation control with size scaling using relative displacement feedback. , 2012, , .		5
53	Offset optimization for a network of signalized intersections via semidefinite relaxation. , 2015, , .		5
54	Weighted Polar Finite Time Control Barrier Functions With Applications To Multi-Robot Systems. , 2019, , .		5

#	ARTICLE	IF	CITATIONS
55	Monitor-Based Runtime Assurance for Temporal Logic Specifications. , 2019, , .		5
56	Verification and runtime assurance for dynamical systems with uncertainty. , 2021, , .		5
57	Provably-Safe Autonomous Navigation of Traffic Circles. , 2019, , .		4
58	Ride-Sharing Networks with Mixed Autonomy. , 2019, , .		4
59	A Distributed Scalar Field Mapping Strategy for Mobile Robots. , 2020, , .		4
60	Safety from in-the-loop reachability for cyber-physical systems. , 2021, , .		3
61	Estimating High Probability Reachable Sets using Gaussian Processes. , 2021, , .		3
62	Verifying safety of interconnected passive systems using SOS programming. , 2013, , .		2
63	Finite state abstraction and formal methods for traffic flow networks. , 2016, , .		2
64	Approximating periodic trajectories of contractive systems. , 2017, , .		2
65	Quantile forecasts for traffic predictive control. , 2017, , .		2
66	Discount-Based Pricing and Capacity Planning for EV Charging Under Stochastic Demand. , 2018, , .		2
67	Optimizing Offsets in Signalized Traffic Networks: A Case Study. , 2018, , .		2
68	Bounding the State Covariance Matrix for Switched Linear Systems with Noise. , 2020, , .		2
69	Lyapunov Differential Equation Hierarchy and Polynomial Lyapunov Functions for Switched Linear Systems. , 2020, , .		2
70	Scheduling of Urban Air Mobility Services with Limited Landing Capacity and Uncertain Travel Times. , 2021, , .		2
71	Continuous Reachability Task Transition Using Control Barrier Functions. IFAC-PapersOnLine, 2020, 53, 9696-9701.	0.5	2
72	A computational approach to synthesizing guards for hybrid systems. Systems and Control Letters, 2014, 73, 25-32.	1.3	1

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73	Symmetric Monotone Embedding of Traffic Flow Networks with First-In-First-Out Dynamics. IFAC-PapersOnLine, 2016, 49, 642-647.	0.5	1
74	Satisfiability Bounds for co-regular Properties in Interval-valued Markov Chains. , 2018, , .		1
75	Approximating the Steady-State Periodic Solutions of Contractive Systems. IEEE Transactions on Automatic Control, 2019, 64, 847-853.	3.6	1
76	Specification-Based Maneuvering of Quadcopters Through Hoops. , 2019, , .		1
77	A Numerically Stable Dynamic Mode Decomposition Algorithm for Nearly Defective Systems. , 2021, 5, 67-72.		1
78	Strong Integral Input-to-State Stability in Dynamical Flow Networks. , 2021, , .		1
79	Pointwise-in-Time Analysis and Non-Quadratic Lyapunov Functions for Linear Time-Varying Systems. , 2021, , .		1
80	Safety With Limited Range Sensing Constraints For Fixed Wing Aircraft. , 2021, , .		1
81	Composition of Safety Constraints for Fixed-Wing Collision Avoidance Amidst Limited Communications. Journal of Guidance, Control, and Dynamics, 2022, 45, 714-725.	1.6	1
82	Robustly Forward Invariant Sets for Mixed-Monotone Systems. IEEE Transactions on Automatic Control, 2022, 67, 4947-4954.	3.6	1
83	Compositional abstraction for interconnected systems over Riemannian manifolds: A dissipativity approach. , 2018, , .		0
84	Set-Based State Estimation of Mobile Robots from Coarse Range Measurements. , 2020, , .		0
85	Memory-loss resilient controller design for temporal logic constraints. Cyber-Physical Systems, 2020, , 1-22.	1.6	0
86	A Numerical Method to Compute Stability Margins of Switching Linear Systems. , 2021, , .		0
87	Interval-valued Markov Chain Abstraction of Stochastic Systems using Barrier Functions. , 2020, , .		0
88	On the Impact of the Capacity Drop Phenomenon for Freeway Traffic Flow Control. , 2021, , .		0
89	Decomposition Functions for Interconnected Mixed Monotone Systems. , 2022, 6, 2120-2125.		0
90	Sensitivity of Electric Vehicle Charging Facility Occupancy to Users' Impatience. , 2021, , .		0

#	Article	IF	Citations
91	LTL cross entropy optimisation for quadcopter task orchestration. Cyber-Physical Systems, 2023, 9, 273-312.	1.6	0