

# Samuel Coogan

## List of Publications by Year in descending order

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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	LTL cross entropy optimisation for quadcopter task orchestration. <i>Cyber-Physical Systems</i> , 2023, 9, 273-312.	1.6	0
2	Koopman Operator Applications in Signalized Traffic Systems. <i>IEEE Transactions on Intelligent Transportation Systems</i> , 2022, 23, 3214-3225.	4.7	7
3	Decomposition Functions for Interconnected Mixed Monotone Systems. , 2022, 6, 2120-2125.		0
4	Composition of Safety Constraints for Fixed-Wing Collision Avoidance Amidst Limited Communications. <i>Journal of Guidance, Control, and Dynamics</i> , 2022, 45, 714-725.	1.6	1
5	Robustly Forward Invariant Sets for Mixed-Monotone Systems. <i>IEEE Transactions on Automatic Control</i> , 2022, 67, 4947-4954.	3.6	1
6	Safe Learning for Uncertainty-Aware Planning via Interval MDP Abstraction. , 2022, 6, 2641-2646.		6
7	Abstraction-based synthesis for stochastic systems with omega-regular objectives. <i>Nonlinear Analysis: Hybrid Systems</i> , 2022, 45, 101204.	2.1	11
8	Safety from Fast, In-the-Loop Reachability with Application to UAVs. , 2022, , .		6
9	A Numerically Stable Dynamic Mode Decomposition Algorithm for Nearly Defective Systems. , 2021, 5, 67-72.		1
10	Tight Decomposition Functions for Continuous-Time Mixed-Monotone Systems With Disturbances. , 2021, 5, 139-144.		23
11	Characterizing Safety: Minimal Control Barrier Functions From Scalar Comparison Systems. , 2021, 5, 523-528.		11
12	Specification-Guided Verification and Abstraction Refinement of Mixed Monotone Stochastic Systems. <i>IEEE Transactions on Automatic Control</i> , 2021, 66, 2975-2990.	3.6	16
13	Routing for Traffic Networks With Mixed Autonomy. <i>IEEE Transactions on Automatic Control</i> , 2021, 66, 2664-2676.	3.6	16
14	A barrier function approach to finite-time stochastic system verification and control. <i>Automatica</i> , 2021, 125, 109439.	3.0	35
15	Control of Mobile Robots Using Barrier Functions Under Temporal Logic Specifications. <i>IEEE Transactions on Robotics</i> , 2021, 37, 363-374.	7.3	28
16	Extent-compatible control barrier functions. <i>Systems and Control Letters</i> , 2021, 150, 104895.	1.3	7
17	Strong Integral Input-to-State Stability in Dynamical Flow Networks. , 2021, , .		1
18	Safety from in-the-loop reachability for cyber-physical systems. , 2021, , .		3

#	ARTICLE	IF	CITATIONS
19	Scheduling of Urban Air Mobility Services with Limited Landing Capacity and Uncertain Travel Times. , 2021, , .		2
20	Improving the Fidelity of Mixed-Monotone Reachable Set Approximations via State Transformations. , 2021, , .		6
21	Verification and runtime assurance for dynamical systems with uncertainty. , 2021, , .		5
22	A Numerical Method to Compute Stability Margins of Switching Linear Systems. , 2021, , .		0
23	Pointwise-in-Time Analysis and Non-Quadratic Lyapunov Functions for Linear Time-Varying Systems. , 2021, , .		1
24	A Sequential Composition Framework for Coordinating Multirobot Behaviors. IEEE Transactions on Robotics, 2021, 37, 864-876.	7.3	6
25	Safety With Limited Range Sensing Constraints For Fixed Wing Aircraft. , 2021, , .		1
26	On the Impact of the Capacity Drop Phenomenon for Freeway Traffic Flow Control. , 2021, , .		0
27	Estimating High Probability Reachable Sets using Gaussian Processes. , 2021, , .		3
28	Sensitivity of Electric Vehicle Charging Facility Occupancy to Usersâ€™ Impatience. , 2021, , .		0
29	Multi-Agent Task Allocation using Cross-Entropy Temporal Logic Optimization. , 2020, , .		15
30	Mixed Autonomy in Ride-Sharing Networks. IEEE Transactions on Control of Network Systems, 2020, 7, 1940-1950.	2.4	7
31	Set-Based State Estimation of Mobile Robots from Coarse Range Measurements. , 2020, , .		0
32	Bounding the State Covariance Matrix for Switched Linear Systems with Noise. , 2020, , .		2
33	Memory-loss resilient controller design for temporal logic constraints. Cyber-Physical Systems, 2020, , 1-22.	1.6	0
34	Lyapunov Differential Equation Hierarchy and Polynomial Lyapunov Functions for Switched Linear Systems. , 2020, , .		2
35	Multi-Level Electric Vehicle Charging Facilities with Limited Resources. IFAC-PapersOnLine, 2020, 53, 15428-15433.	0.5	11
36	Enforcing Safety at Runtime for Systems with Disturbances. , 2020, , .		9

#	ARTICLE	IF	CITATIONS
37	Mixed Monotonicity for Reachability and Safety in Dynamical Systems. , 2020, , .		25
38	Computing Robustly Forward Invariant Sets for Mixed-Monotone Systems. , 2020, , .		12
39	Synthesis of Control Barrier Functions Using a Supervised Machine Learning Approach. , 2020, , .		46
40	Continuous Reachability Task Transition Using Control Barrier Functions. IFAC-PapersOnLine, 2020, 53, 9696-9701.	0.5	2
41	Interval-valued Markov Chain Abstraction of Stochastic Systems using Barrier Functions. , 2020, , .		0
42	A Distributed Scalar Field Mapping Strategy for Mobile Robots. , 2020, , .		4
43	Control Barrier Functions: Theory and Applications. , 2019, , .		650
44	A contractive approach to separable Lyapunov functions for monotone systems. Automatica, 2019, 106, 349-357.	3.0	20
45	Approximating the Steady-State Periodic Solutions of Contractive Systems. IEEE Transactions on Automatic Control, 2019, 64, 847-853.	3.6	1
46	Provably-Safe Autonomous Navigation of Traffic Circles. , 2019, , .		4
47	Specification-Based Maneuvering of Quadcopters Through Hoops. , 2019, , .		1
48	Ride-Sharing Networks with Mixed Autonomy. , 2019, , .		4
49	Weighted Polar Finite Time Control Barrier Functions With Applications To Multi-Robot Systems. , 2019, , .		5
50	Monitor-Based Runtime Assurance for Temporal Logic Specifications. , 2019, , .		5
51	Optimal Tolling for Heterogeneous Traffic Networks with Mixed Autonomy. , 2019, , .		10
52	Verification and Control for Finite-Time Safety of Stochastic Systems via Barrier Functions. , 2019, , .		15
53	Control of Multi-Agent Systems with Finite Time Control Barrier Certificates and Temporal Logic. , 2018, , .		53
54	Satisfiability Bounds for co-regular Properties in Interval-valued Markov Chains. , 2018, , .		1

#	ARTICLE	IF	CITATIONS
55	Discount-Based Pricing and Capacity Planning for EV Charging Under Stochastic Demand. , 2018, , .		2
56	The Price of Anarchy for Transportation Networks with Mixed Autonomy*. , 2018, , .		10
57	Compositional abstraction for interconnected systems over Riemannian manifolds: A dissipativity approach. , 2018, , .		0
58	Optimizing Offsets in Signalized Traffic Networks: A Case Study. , 2018, , .		2
59	Koopman Operator Approach for Instability Detection and Mitigation in Signalized Traffic. , 2018, , .		7
60	Efficient Verification for Stochastic Mixed Monotone Systems. , 2018, , .		12
61	Sampled-Data Reachability Analysis Using Sensitivity and Mixed-Monotonicity. , 2018, 2, 761-766.		15
62	Offset optimization in signalized traffic networks via semidefinite relaxation. Transportation Research Part B: Methodological, 2017, 100, 82-92.	2.8	14
63	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
64	Traffic predictive control from low-rank structure. Transportation Research Part B: Methodological, 2017, 97, 1-22.	2.8	25
65	Finite abstraction of mixed monotone systems with discrete and continuous inputs. Nonlinear Analysis: Hybrid Systems, 2017, 23, 254-271.	2.1	14
66	Approximating periodic trajectories of contractive systems. , 2017, , .		2
67	Quantile forecasts for traffic predictive control. , 2017, , .		2
68	Capacity modeling and routing for traffic networks with mixed autonomy. , 2017, , .		29
69	Finite state abstraction and formal methods for traffic flow networks. , 2016, , .		2
70	Mixed monotonicity of partial first-in-first-out traffic flow models. , 2016, , .		13
71	Separability of Lyapunov functions for contractive monotone systems. , 2016, , .		6
72	Symmetric Monotone Embedding of Traffic Flow Networks with First-In-First-Out Dynamics. IFAC-PapersOnLine, 2016, 49, 642-647.	0.5	1

#	ARTICLE	IF	CITATIONS
73	Management of intersections with multi-modal high-resolution data. <i>Transportation Research Part C: Emerging Technologies</i> , 2016, 68, 101-112.	3.9	18
74	Stability of traffic flow networks with a polytree topology. <i>Automatica</i> , 2016, 66, 246-253.	3.0	39
75	Traffic Network Control From Temporal Logic Specifications. <i>IEEE Transactions on Control of Network Systems</i> , 2016, 3, 162-172.	2.4	46
76	Offset optimization for a network of signalized intersections via semidefinite relaxation. , 2015, , .		5
77	A Dissipativity Approach to Safety Verification for Interconnected Systems. <i>IEEE Transactions on Automatic Control</i> , 2015, 60, 1722-1727.	3.6	34
78	Controlling a network of signalized intersections from temporal logical specifications. , 2015, , .		11
79	A Compartmental Model for Traffic Networks and Its Dynamical Behavior. <i>IEEE Transactions on Automatic Control</i> , 2015, 60, 2698-2703.	3.6	63
80	Efficient finite abstraction of mixed monotone systems. , 2015, , .		73
81	A learning based approach to control synthesis of Markov decision processes for linear temporal logic specifications. , 2014, , .		52
82	A computational approach to synthesizing guards for hybrid systems. <i>Systems and Control Letters</i> , 2014, 73, 25-32.	1.3	1
83	Dynamical properties of a compartmental model for traffic networks. , 2014, , .		20
84	Freeway traffic control from linear temporal logic specifications. , 2014, , .		17
85	Energy management via pricing in LQ dynamic games. , 2013, , .		24
86	Verifying safety of interconnected passive systems using SOS programming. , 2013, , .		2
87	Formation control with size scaling using relative displacement feedback. , 2012, , .		5
88	Pricing in linear-quadratic dynamic games. , 2012, , .		8
89	Scaling the size of a formation using relative position feedback. <i>Automatica</i> , 2012, 48, 2677-2685.	3.0	79
90	Guard synthesis for safety of hybrid systems using sum of squares programming. , 2012, , .		6

#	ARTICLE	IF	CITATIONS
91	Scaling the size of a multiagent formation via distributed feedback. , 2011, , .		10