Michael Margaliot

List of Publications by Year
in descending order

103 papers	3,070 citations	186265 28 h-index	168389 53 g-index
106 all docs	106 docs citations	106 times ranked	1189 citing authors

#	Article	IF	Citations
1	Controllability of Boolean control networks via the Perronâ€“Frobenius theory. Automatica, 2012, 48, 1218-1223.	5.0	305
2	A Maximum Principle for Single-Input Boolean Control Networks. IEEE Transactions on Automatic Control, 2011, 56, 913-917.	5.7	238
3	Stability analysis of switched systems using variational principles: An introduction. Automatica, 2006, 42, 2059-2077.	5.0	236
4	Observability of Boolean networks: A graph-theoretic approach. Automatica, 2013, 49, 2351-2362.	5.0	182
5	On the Stability of Positive Linear Switched Systems Under Arbitrary Switching Laws. IEEE Transactions on Automatic Control, 2009, 54, 897-899.	5.7	163
6	Minimum-Time Control of Boolean Networks. SIAM Journal on Control and Optimization, 2013, 51, 2869-2892.	2.1	140
7	Lie-algebraic stability conditions for nonlinear switched systems and differential inclusions. Systems and Control Letters, 2006, 55, 8-16.	2.3	99
8	A model for competition for ribosomes in the cell. Journal of the Royal Society Interface, 2016, 13, 20151062.	3.4	94
9	Fuzzy Lyapunov-based approach to the design of fuzzy controllers. Fuzzy Sets and Systems, 1999, 106, 49-59.	2.7	89
10	Are Artificial Neural Networks White Boxes?. IEEE Transactions on Neural Networks, 2005, 16, 844-852.	4.2	79
11	Stability Analysis of the Ribosome Flow Model. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2012, 9, 1545-1552.	3.0	68
12	Root-mean-square gains of switched linear systems: A variational approach. Automatica, 2008, 44, 2398-2402.	5.0	66
13	Entrainment to Periodic Initiation and Transition Rates in a Computational Model for Gene Translation. PLoS ONE, 2014, 9, e96039.	2.5	65
14	Stability Analysis of Second-Order Switched Homogeneous Systems. SIAM Journal on Control and Optimization, 2002, 41, 1609-1625.	2.1	56
15	Ribosome flow model with positive feedback. Journal of the Royal Society Interface, 2013, 10, 20130267.	3.4	47
16	Mathematical modeling of observed natural behavior: a fuzzy logic approach. Fuzzy Sets and Systems, 2004, 146, 437-450.	2.7	45
17	Symbolic dynamics of Boolean control networks. Automatica, 2013, 49, 2525-2530.	5.0	45
18	Maximizing protein translation rate in the non-homogeneous ribosome flow model: a convex optimization approach. Journal of the Royal Society Interface, 2014, 11, 20140713.	3.4	45

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19	Third-order nilpotency, nice reachability and asymptotic stability. Journal of Differential Equations, 2007, 233, 136-150.	2.2	39
20	A Polynomial-Time Algorithm for Solving the Minimal Observability Problem in Conjunctive Boolean Networks. IEEE Transactions on Automatic Control, 2019, 64, 2727-2736.	5.7	38
21	Minimal controllability of conjunctive Boolean networks is NP-complete. Automatica, 2018, 92, 56-62.	5.0	37
22	Revisiting totally positive differential systems: A tutorial and new results. Automatica, 2019, 101, 1-14.	5.0	37
23	On the Ribosomal Density that Maximizes Protein Translation Rate. PLoS ONE, 2016, 11, e0166481.	2.5	35
24	Ribosome Flow Model on a Ring. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2015, 12, 1429-1439.	3.0	34
25	Sensitivity of mRNA Translation. Scientific Reports, 2015, 5, 12795.	3.3	31
26	Contraction after small transients. Automatica, 2016, 67, 178-184.	5.0	31
27	Analysis of Discrete-Time Linear Switched Systems: A Variational Approach. SIAM Journal on Control and Optimization, 2011, 49, 808-829.	2.1	29
28	A Maximum Principle for the Stability Analysis of Positive Bilinear Control Systems with Applications to Positive Linear Switched Systems. SIAM Journal on Control and Optimization, 2012, 50, 2193-2215.	2.1	28
29	Explicit Expression for the Steady-State Translation Rate in the Infinite-Dimensional Homogeneous Ribosome Flow Model. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2013, 10, 1322-1328.	3.0	28
30	A second-order maximum principle for discrete-time bilinear control systems with applications to discrete-time linear switched systems. Automatica, 2011, 47, 1489-1495.	5.0	26
31	On the Steady-State Distribution in the Homogeneous Ribosome Flow Model. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2012, 9, 1724-1736.	3.0	26
32	Knowledge Extraction From Neural Networks Using the All-Permutations Fuzzy Rule Base: The LED Display Recognition Problem. IEEE Transactions on Neural Networks, 2007, 18, 925-931.	4.2	19
33	Optimal Down Regulation of mRNA Translation. Scientific Reports, 2017, 7, 41243.	3.3	19
34	A Counterexample to a Conjecture of Gurvits on Switched Systems. IEEE Transactions on Automatic Control, 2007, 52, 1123-1126.	5.7	18
35	Biomimicry and Fuzzy Modeling: A Match Made in Heaven. IEEE Computational Intelligence Magazine, 2008, 3, 38-48.	3.2	18
36	The problem of absolute stability: a dynamic programming approach. Automatica, 2004, 40, 1247-1252.	5.0	17

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37	The Fuzzy Ant. IEEE Computational Intelligence Magazine, 2007, 2, 18-28.	3.2	17
38	Extracting symbolic knowledge from recurrent neural networksâ€”A fuzzy logic approach. Fuzzy Sets and Systems, 2009, 160, 145-161.	2.7	17
39	Ribosome flow model with extended objects. Journal of the Royal Society Interface, 2017, 14, 20170128.	3.4	16
40	Networks of ribosome flow models for modeling and analyzing intracellular traffic. Scientific Reports, 2019, 9, 1703.	3.3	16
41	Output Selection and Observer Design for Boolean Control Networks: A Sub-Optimal Polynomial-Complexity Algorithm. , 2019, 3, 210-215.		16
42	Ribosome Flow Model with Different Site Sizes. SIAM Journal on Applied Dynamical Systems, 2020, 19, 541-576.	1.6	16
43	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e142" altimg="si7.svg"><mml:mi>k</mml:mi></mml:math>-contraction: Theory and applications. Automatica, 2022, 136, 110048.	5.0	16
44	The Low-Frequency Distortion in D-Class Amplifiers. IEEE Transactions on Circuits and Systems II: Express Briefs, 2010, 57, 772-776.	3.0	15
45	A generalization of linear positive systems with applications to nonlinear systems: Invariant sets and the PoincarÃ©â€“Bendixson property. Automatica, 2021, 123, 109358.	5.0	15
46	Optimal Translation Along a Circular mRNA. Scientific Reports, 2017, 7, 9464.	3.3	14
47	Dynamical Systems With a Cyclic Sign Variation Diminishing Property. IEEE Transactions on Automatic Control, 2020, 65, 941-954.	5.7	14
48	Some nonlinear optimal control problems with closed-form solutions. International Journal of Robust and Nonlinear Control, 2001, 11, 1365-1374.	3.7	13
49	On Boolean control networks with maximal topological entropy. Automatica, 2014, 50, 2924-2928.	5.0	13
50	A deterministic mathematical model for bidirectional excluded flow with Langmuir kinetics. PLoS ONE, 2017, 12, e0182178.	2.5	13
51	Nicholson's blowflies revisited: A fuzzy modeling approach. Fuzzy Sets and Systems, 2007, 158, 1083-1096.	2.7	12
52	Maximizing Protein Translation Rate in the Ribosome Flow Model: The Homogeneous Case. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2014, 11, 1184-1195.	3.0	12
53	On the spectral properties of nonsingular matrices that are strictly sign-regular for some order with applications to totally positive discrete-time systems. Journal of Mathematical Analysis and Applications, 2019, 474, 524-543.	1.0	12
54	How does the Dendrocoleum lacteum orient to light? A fuzzy modeling approach. Fuzzy Sets and Systems, 2005, 155, 236-251.	2.7	11

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55	Controllability Analysis and Control Synthesis for the Ribosome Flow Model. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2018, 15, 1351-1364.	3.0	11
56	Entrainment in the master equation. Royal Society Open Science, 2018, 5, 172157.	2.4	11
57	Variability in mRNA translation: a random matrix theory approach. Scientific Reports, 2021, 11, 5300.	3.3	11
58	A New Approach to Knowledge-Based Design of Recurrent Neural Networks. IEEE Transactions on Neural Networks, 2008, 19, 1389-1401.	4.2	10
59	Explicit construction of a Barabanov norm for a class of positive planar discrete-time linear switched systems. Automatica, 2012, 48, 95-101.	5.0	10
60	Entrainment to subharmonic trajectories in oscillatory discrete-timeÂsystems. Automatica, 2020, 116, 108919.	5.0	10
61	Discrete-Time k-Positive Linear Systems. IEEE Transactions on Automatic Control, 2021, 66, 399-405.	5.7	10
62	Checkable Conditions for Contraction After Small Transients in Time and Amplitude. Lecture Notes in Control and Information Sciences, 2017, , 279-305.	1.0	10
63	Large-scale mRNA translation and the intricate effects of competition for the finite pool of ribosomes. Journal of the Royal Society Interface, 2022, 19, 20220033.	3.4	10
64	On the analysis of nonlinear nilpotent switched systems using the Hallâ€“Sussmann system. Systems and Control Letters, 2009, 58, 766-772.	2.3	9
65	Mathematical modeling of the lambda switch: A fuzzy logic approach. Journal of Theoretical Biology, 2009, 260, 475-489.	1.7	8
66	A simplification of the Agrachevâ€“Gamkrelidze second-order variation for bangâ€“bang controls. Systems and Control Letters, 2010, 59, 25-32.	2.3	8
67	On three generalizations of contraction. , 2014, , .		8
68	Is My System of ODEs k-Cooperative?. , 2021, 5, 73-78.		8
69	Analysis of artificial neural network learning near temporary minima: A fuzzy logic approach. Fuzzy Sets and Systems, 2010, 161, 2569-2584.	2.7	7
70	No Switching Policy Is Optimal for a Positive Linear System With a Bottleneck Entrance. , 2019, 3, 889-894.		7
71	Diagonal Stability of Discrete-Time k-Positive Linear Systems With Applications to Nonlinear Systems. IEEE Transactions on Automatic Control, 2022, 67, 4308-4313.	5.7	7
72	Mathematical analysis of a flying capacitor converter: a sampledâ€data modeling approach. International Journal of Circuit Theory and Applications, 2013, 41, 682-700.	2.0	6

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73	On Approximating Contractive Systems. IEEE Transactions on Automatic Control, 2017, 62, 6451-6457.	5.7	6
74	Maximizing average throughput in oscillatory biochemical synthesis systems: an optimal control approach. Royal Society Open Science, 2021, 8, 210878.	2.4	6
75	Compound matrices in systems and control theory. , 2021, , .		6
76	Stability Analysis of Positive Linear Switched Systems: A Variational Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 31-35.	0.4	5
77	Modeling and Analyzing the Flow of Molecular Machines in Gene Expression. RNA Technologies, 2018, , 275-300.	0.3	5
78	Random Attraction in the TASEP Model. SIAM Journal on Applied Dynamical Systems, 2021, 20, 65-93.	1.6	5
79	A deterministic model for one-dimensional excluded flow with local interactions. PLoS ONE, 2017, 12, e0182074.	2.5	5
80	A Generalization of Linear Positive Systems. , 2019, , .		4
81	Serial interconnections of 1-contracting and 2-contracting systems. , 2021, , .		4
82	Stability analysis of positive bilinear control systems: A variational approach. , 2013, , .		3
83	A Generalization of Smillie's Theorem on Strongly Cooperative Tridiagonal Systems. , 2018, , .		3
84	Mathematical Modeling of Natural Phenomena: A Fuzzy Logic Approach. , 2007, , 113-134.		3
85	A Counter Example to a Conjecture of Gurvits on Switched Systems. , 2006, , .		2
86	Knowledge extraction from a class of support vector machines using the fuzzy all-permutations rule-base. , 2011, , .		2
87	High-order maximum principles for the stability analysis of positive bilinear control systems. Optimal Control Applications and Methods, 2016, 37, 1056-1073.	2.1	2
88	Approximating periodic trajectories of contractive systems. , 2017, , .		2
89	NEURAL NETWORKS=FUZZY RULE BASES. , 2004, , .		2
90	A Second-Order Optimality Condition for the Most Destabilizing Control of a Discrete-Time Bilinear Control System*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 272-277.	0.4	1

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91	Minimum-time control of Boolean networks: An algebraic approach. , 2014, , .		1
92	Controlling the ribosomal density profile in mRNA translation. , 2016, , .		1
93	Analysis of Nonlinear Tridiagonal Cooperative Systems using Totally Positive Linear Differential Systems. , 2018, , .		1
94	Approximating the Steady-State Periodic Solutions of Contractive Systems. IEEE Transactions on Automatic Control, 2019, 64, 847-853.	5.7	1
95	On the exponent of several classes of oscillatory matrices. Linear Algebra and Its Applications, 2021, 608, 363-386.	0.9	1
96	Behavior of Totally Positive Differential Systems Near a Periodic Solution. , 2021, , .		1
97	Minimum Effort Decentralized Control Design for Contracting Network Systems. , 2022, 6, 2731-2736.		1
98	Nice Reachability Results for Discreteâ€“Time Linear Switched Systems*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 173-178.	0.4	0
99	Nice-reachability results for discrete-time linear switched systems with applications to stability under arbitrary switching laws. , 2012, , .		0
100	Optimal switching between two linear consensus protocols. , 2013, , .		0
101	On Totally Positive Discrete- Time Systems. , 2019, , .		0
102	Ribosome flow model with nonhomogeneous site sizes. , 2019, , .		0
103	Knowledge Extraction from Support Vector Machines: A Fuzzy Logic Approach. Studies in Fuzziness and Soft Computing, 2015, , 361-385.	0.8	0