Antoine Girard

List of Publications by Year
in descending order

146 papers	6,497 citations	117453 34 h-index	71532 76 g-index
149 all docs	149 docs citations	149 times ranked	2471 citing authors

#	Article	IF	Citations
1	Dynamic Triggering Mechanisms for Event-Triggered Control. IEEE Transactions on Automatic Control, 2015, 60, 1992-1997.	3.6	1,173
2	SpaceEx: Scalable Verification of Hybrid Systems. Lecture Notes in Computer Science, 2011, , 379-395.	1.0	496
3	Reachability of Uncertain Linear Systems Using Zonotopes. Lecture Notes in Computer Science, 2005, , 291-305.	1.0	347
4	Approximation Metrics for Discrete and Continuous Systems. IEEE Transactions on Automatic Control, 2007, 52, 782-798.	3.6	345
5	Temporal logic motion planning for dynamic robots. Automatica, 2009, 45, 343-352.	3.0	336
6	Approximately Bisimilar Symbolic Models for Incrementally Stable Switched Systems. IEEE Transactions on Automatic Control, 2010, 55, 116-126.	3.6	259
7	Approximately bisimilar symbolic models for nonlinear control systems. Automatica, 2008, 44, 2508-2516.	3.0	234
8	Efficient Computation of Reachable Sets of Linear Time-Invariant Systems with Inputs. Lecture Notes in Computer Science, 2006, , 257-271.	1.0	162
9	Hybridization methods for the analysis of nonlinear systems. Acta Informatica, 2007, 43, 451-476.	0.5	151
10	Reachability analysis of linear systems using support functions. Nonlinear Analysis: Hybrid Systems, 2010, 4, 250-262.	2.1	150
11	Hierarchical control system design using approximate simulation. Automatica, 2009, 45, 566-571.	3.0	124
12	Set Propagation Techniques for Reachability Analysis. Annual Review of Control, Robotics, and Autonomous Systems, 2021, 4, 369-395.	7.5	102
13	Approximate Bisimulation: A Bridge Between Computer Science and Control Theory. European Journal of Control, 2011, 17, 568-578.	1.6	100
14	Opinion Dynamics With Decaying Confidence: Application to Community Detection in Graphs. IEEE Transactions on Automatic Control, 2011, 56, 1862-1873.	3.6	97
15	Reachability Analysis of Nonlinear Systems Using Conservative Approximation. Lecture Notes in Computer Science, 2003, , 20-35.	1.0	92
16	Controller synthesis for safety and reachability via approximate bisimulation. Automatica, 2012, 48, 947-953.	3.0	85
17	Event-based control of linear hyperbolic systems of conservation laws. Automatica, 2016, 70, 275-287.	3.0	84
18	Reachability Analysis of Hybrid Systems Using Support Functions. Lecture Notes in Computer Science, 2009, , 540-554.	1.0	82

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19	Approximate Simulation Relations for Hybrid Systems. Discrete Event Dynamic Systems: Theory and Applications, 2008, 18, 163-179.	0.6	73
20	Approximate bisimulation relations for constrained linear systems. Automatica, 2007, 43, 1307-1317.	3.0	72
21	Symbolic models for stochastic switched systems: A discretization and a discretization-free approach. Automatica, 2015, 55, 183-196.	3.0	72
22	Compositional Abstraction and Safety Synthesis Using Overlapping Symbolic Models. IEEE Transactions on Automatic Control, 2018, 63, 1835-1841.	3.6	65
23	Safety Controller Synthesis for Incrementally Stable Switched Systems Using Multiscale Symbolic Models. IEEE Transactions on Automatic Control, 2016, 61, 1537-1549.	3.6	64
24	On the Stabilizability of Discrete-Time Switched Linear Systems: Novel Conditions and Comparisons. IEEE Transactions on Automatic Control, 2016, 61, 1181-1193.	3.6	63
25	Verification Using Simulation. Lecture Notes in Computer Science, 2006, , 272-286.	1.0	61
26	Zonotope/Hyperplane Intersection for Hybrid Systems Reachability Analysis. Lecture Notes in Computer Science, 2008, , 215-228.	1.0	60
27	Efficient Reachability Analysis for Linear Systems using Support Functions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 8966-8971.	0.4	58
28	CoSyMA. , 2013, , .		56
29	Multiagent Flocking Under General Communication Rule. IEEE Transactions on Control of Network Systems, 2014, 1, 155-166.	2.4	56
30	Approximate Bisimulations for Nonlinear Dynamical Systems. , 0, , .		51
31	Event-Based Boundary Control of a Linear <inline-formula> <tex-math notation="LaTeX">$2imes 2$ </tex-math> </inline-formula> Hyperbolic System via Backstepping Approach. IEEE Transactions on Automatic Control, 2018, 63, 2686-2693.	3.6	51
32	Clustered model reduction of positive directed networks. Automatica, 2015, 59, 238-247.	3.0	42
33	Continuous-Time Consensus under Persistent Connectivity and Slow Divergence of Reciprocal Interaction Weights. SIAM Journal on Control and Optimization, 2013, 51, 2568-2584.	1.1	41
34	Coordination in Networks of Linear Impulsive Agents. IEEE Transactions on Automatic Control, 2016, 61, 2402-2415.	3.6	41
35	Synthesis for Constrained Nonlinear Systems Using Hybridization and Robust Controllers on Simplices. IEEE Transactions on Automatic Control, 2012, 57, 1046-1051.	3.6	39
36	Stability of Switched Linear Hyperbolic Systems by Lyapunov Techniques. IEEE Transactions on Automatic Control, 2014, 59, 2196-2202.	3.6	39

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37	Stability analysis of a general class of singularly perturbed linear hybrid systems. Automatica, 2018, 90, 98-108.	3.0	34
38	Approximately Bisimilar Finite Abstractions of Stable Linear Systems. , 2007, , 231-244.		34
39	Approximate Bisimulations for Constrained Linear Systems. , 0, , .		30
40	Computation of polytopic invariants for polynomial dynamical systems using linear programming. Automatica, 2012, 48, 3114-3121.	3.0	30
41	Temporal Logic Verification Using Simulation. Lecture Notes in Computer Science, 2006, , 171-186.	1.0	30
42	Approximate bisimulation for a class of stochastic hybrid systems. , 2006, , .		28
43	Mode sequences as symbolic states in abstractions of incrementally stable switched systems. , 2013, , .		28
44	Tikhonov theorem for linear hyperbolic systems. Automatica, 2015, 57, 1-10.	3.0	27
45	Stabilization and control Lyapunov functions for language constrained discrete-time switched linear systems. Automatica, 2018, 93, 64-74.	3.0	25
46	Reachability Analysis of Polynomial Systems Using Linear Programming Relaxations. Lecture Notes in Computer Science, 2012, , 137-151.	1.0	25
47	Low-complexity quantized switching controllers using approximate bisimulation. Nonlinear Analysis: Hybrid Systems, 2013, 10, 34-44.	2.1	23
48	Time-triggered implementations of dynamic controllers. , 2006, , .		22
49	On the Composition of Discrete and Continuous-time Assume-Guarantee Contracts for Invariance. , 2018, , .		21
50	Robust controlled invariance for monotone systems: Application to ventilation regulation in buildings. Automatica, 2016, 70, 14-20.	3.0	20
51	Safety control with performance guarantees of cooperative systems using compositional abstractions**This work was partly supported by a PhD scholarship and the research project COHYBA funded by R_egion Rh^one-Alpes.. IFAC-PapersOnLine, 2015, 48, 317-322.	0.5	19
52	Assume-guarantee contracts for continuous-time systems. Automatica, 2021, 134, 109910.	3.0	19
53	Switching Rules for Stabilization of Linear Systems of Conservation Laws. SIAM Journal on Control and Optimization, 2015, 53, 1599-1624.	1.1	18
54	Synthesis using approximately bisimilar abstractions. , 2010, , .		18

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55	Contract Based Design of Symbolic Controllers for Interconnected Multiperiodic Sampled-Data Systems. , 2018, , .		17
56	Symbolic models for nonlinear control systems using approximate bisimulation. , 2007, , .		16
57	Safety controller synthesis for switched systems using multi-scale symbolic models. , 2011, , .		16
58	Hierarchical Synthesis of Hybrid Controllers from Temporal Logic Specifications. , 2007, , 203-216.		16
59	Synthesis of switching controllers using approximately bisimilar multiscale abstractions. , 2011, , .		15
60	Approximately Bisimilar Symbolic Models for Incrementally Stable Switched Systems. Lecture Notes in Computer Science, 2008, , 201-214.	1.0	15
61	Controllability and invariance of monotone systems for robust ventilation automation in buildings. , 2013, , .		14
62	Hierarchical Control using Approximate Simulation Relations. , 2006, , .		13
63	Clustering-based ℌ<inf>2</inf>-state aggregation of positive networks and its application to reduction of chemical master equations. , 2012, , .		13
64	Stability verification and timing contract synthesis for linear impulsive systems using reachability analysis. Nonlinear Analysis: Hybrid Systems, 2017, 25, 211-226.	2.1	13
65	From dissipativity theory to compositional synthesis of symbolic models. , 2018, , .		13
66	Optimal multirate sampling in symbolic models for incrementally stable switched systems. Automatica, 2018, 98, 58-65.	3.0	13
67	Contract-Based Design of Symbolic Controllers for Safety in Distributed Multiperiodic Sampled-Data Systems. IEEE Transactions on Automatic Control, 2021, 66, 1055-1070.	3.6	13
68	Time-Triggered Implementations of Dynamic Controllers. Transactions on Embedded Computing Systems, 2012, 11, 1-24.	2.1	12
69	Controller synthesis for robust invariance of polynomial dynamical systems using linear programming. Systems and Control Letters, 2012, 61, 506-512.	1.3	12
70	Event-based stabilization of linear systems of conservation laws using a dynamic triggering condition. IFAC-PapersOnLine, 2016, 49, 362-367.	0.5	12
71	A symbolic approach to voltage stability and power sharing in time-varying DC microgrids. , 2019, , .		12
72	Sufficient conditions for flocking via graph robustness analysis. , 2010, , .		11

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73	Approximately bisimilar abstractions of incrementally stable finite or infinite dimensional systems. , 2014, , .		11
74	Verification and Synthesis of Timing Contracts for Embedded Controllers. , 2016, , .		11
75	Fluid-flow modeling and stability analysis of communication networks. IFAC-PapersOnLine, 2017, 50, 4534-4539.	0.5	11
76	An optimisation approach for stability analysis and controller synthesis of linear hyperbolic systems. ESAIM - Control, Optimisation and Calculus of Variations, 2016, 22, 1236-1263.	0.7	11
77	Recent Progress in Continuoushybrid Reachability Analysis. , 2006, , .		11
78	APPROXIMATE SIMULATION RELATIONS FOR HYBRID SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 106-111.	0.4	10
79	Compositionality results for cardiac cell dynamics. , 2014, , .		10
80	Singular perturbation approximation by means of a <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.gif" display="inline" overflow="scroll"><mml:msup><mml:mrow><mml:mi>H</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></m Lyapunov function for linear hyperbolic systems. Systems and Control Letters, 2016, 88, 24-31.	1.3	10
81	Approximate hierarchies of linear control systems. , 2007, , .		9
82	Motion planning for nonlinear systems using hybridizations and robust controllers on simplices. , 2008, , .		9
83	Low-Complexity Switching Controllers for Safety using Symbolic Models. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 82-87.	0.4	9
84	Compositional Abstraction-based Synthesis for Cascade Discrete-Time Control Systems. IFAC-PapersOnLine, 2018, 51, 13-18.	0.5	9
85	Efficient Synthesis for Monotone Transition Systems and Directed Safety Specifications. , 2019, , .		9
86	Stability and stabilizability of discrete-time dual switching systems with application to sampled-data systems. Automatica, 2019, 100, 388-395.	3.0	9
87	Least-violating symbolic controller synthesis for safety, reachability and attractivity specifications. Automatica, 2021, 127, 109543.	3.0	9
88	Lyapunov functions for switched linear hyperbolic systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 382-387.	0.4	8
89	On stabilizability conditions for discrete-time switched linear systems. , 2014, , .		8
90	Symbolic Observer-Based Controller for Uncertain Nonlinear Systems. , 2021, 5, 1297-1302.		8

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91	Scheduling of Embedded Controllers Under Timing Contracts. , 2017, , .		8
92	Quantifying the Gap between Embedded Control Models and Time-Triggered Implementations. , 0, , .		7
93	Synthesis using approximately bisimilar abstractions: time-optimal control problems. , 2010, , .		7
94	Verification of Safety and Liveness Properties of Metric Transition Systems. Transactions on Embedded Computing Systems, 2012, 11, 1-23.	2.1	7
95	Lyapunov techniques for stabilization of switched linear systems of conservation laws. , 2013, , .		7
96	Stability analysis of a singularly perturbed coupled ODE-PDE system. , 2015, , .		7
97	Singular Perturbation Approximation of Linear Hyperbolic Systems of Balance Laws. IEEE Transactions on Automatic Control, 2016, 61, 3031-3037.	3.6	7
98	Lyapunov Functions for Shuffle Asymptotic Stability of Discrete-Time Switched Systems. , 2019, 3, 499-504.		7
99	Efficient Data-Driven Abstraction of Monotone Systems with Disturbances. IFAC-PapersOnLine, 2021, 54, 49-54.	0.5	7
100	Compositional Abstraction-Based Synthesis for Interconnected Systems: An Approximate Composition Approach. IEEE Transactions on Control of Network Systems, 2021, 8, 702-712.	2.4	7
101	Lyapunov stability of a singularly perturbed system of two conservation laws. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 227-232.	0.4	6
102	Boundary control synthesis for hyperbolic systems: A singular perturbation approach. , 2014, , .		6
103	Experimental implementation of UFAD regulation based on Robust Controlled Invariance. , 2014, , .		6
104	Stability Verification of Nearly Periodic Impulsive Linear Systems using Reachability Analysis**This work was supported by the Agence Nationale de la Recherche (COMPACS project ANR-13-BS03-0004).. IFAC-PapersOnLine, 2015, 48, 358-363.	0.5	6
105	Triggering mechanism using freely selected sensors for linear time-invariant systems. , 2015, , .		6
106	Language constrained stabilization of discrete-time switched linear systems: a Lyapunov-Metzler inequalities approach. , 2016, , .		6
107	Symbolic Models for a Class of Impulsive Systems. , 2021, 5, 247-252.		6
108	Towards a Multiresolution Approach to Linear Control. IEEE Transactions on Automatic Control, 2006, 51, 1261-1270.	3.6	5

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109	Multi-agent flocking with random communication radius. , 2012, , .		5
110	Iterative computation of polyhedral invariants sets for polynomial dynamical systems. , 2014, , .		5
111	LMI-based design of dynamic event-triggering mechanism for linear systems. , 2018, , .		5
112	Symbolic models for incrementally stable switched systems with aperiodic time sampling. IFAC-PapersOnLine, 2018, 51, 253-258.	0.5	5
113	Contract based Design of Symbolic Controllers for Vehicle Platooning. , 2018, , .		5
114	A Quantitative Approach on Assume-Guarantee Contracts for Safety of Interconnected Systems. , 2019, , .		5
115	Language constrained stabilization of discrete-time switched linear systems: an LMI approach. IFAC-PapersOnLine, 2018, 51, 25-30.	0.5	4
116	Safety control, a quantitative approach. IFAC-PapersOnLine, 2018, 51, 187-192.	0.5	4
117	Decentralized monotonicity-based voltage control of DC microgrids with ZIP loads. IFAC-PapersOnLine, 2019, 52, 139-144.	0.5	4
118	Bounded and Unbounded Safety Verification Using Bisimulation Metrics. Lecture Notes in Computer Science, 2009, , 426-440.	1.0	4
119	Abstraction of Monotone Systems Based on Feedback Controllers. IFAC-PapersOnLine, 2020, 53, 1819-1824.	0.5	4
120	Stability of shuffled switched linear systems: A joint spectral radius approach. Automatica, 2022, 143, 110434.	3.0	4
121	Exponential stabilization of language constrained discrete-time switched linear systems: A geometrical approach. , 2016, , .		3
122	Safety synthesis for incrementally stable switched systems using discretization-free multi-resolution abstractions. Acta Informatica, 2020, 57, 245-269.	0.5	3
123	Lazy Safety Controller Synthesis with Multi-Scale Adaptive-Sampling Abstractions of Nonlinear Systems. IFAC-PapersOnLine, 2020, 53, 1837-1843.	0.5	3
124	Lazy controller synthesis for monotone transition systems and directed safety specifications. Automatica, 2022, 135, 109993.	3.0	3
125	A Model of Opinion Dynamics for Community Detection in Graphs. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 251-256.	0.4	2
126	Coordination in networks of linear impulsive agents. , 2014, , .		2

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127	Self-Triggered Control for Sampled-data Systems using Reachability Analysis * *This work was supported by the Agence Nationale de la Recherche (COMPACS project ANR-13-BS03-0004) and by the Labex Digi-Cosme, UniversitÃ© Paris-Saclay (CODECSYS project). IFAC-PapersOnLine, 2017, 50, 7881-7886.	0.5	2
128	Multirate Symbolic Models for Incrementally Stable Switched Systems * *This work has been supported by the Labex Digicosme, UniversitÃ© Paris-Saclay (CODECSYS project).. IFAC-PapersOnLine, 2017, 50, 9278-9284.	0.5	2
129	Lazy Symbolic Controller for Continuous-Time Systems Based on Safe Set Boundary Exploration. IFAC-PapersOnLine, 2021, 54, 109-114.	0.5	2
130	Stability of discrete-time switched linear systems with Ï‰-regular switching sequences. , 2022, , .		2
131	Symbolic control of monotone systems application to ventilation regulation in buildings. , 2015, , .		1
132	Dynamic boundary control synthesis of coupled PDE-ODEs for communication networks under fluid flow modeling. , 2017, , .		1
133	Formal controller synthesis from specifications given by discrete-time hybrid automata. Automatica, 2021, 131, 109768.	3.0	1
134	Consensus with Constrained Convergence Rate and Time-Delays. Lecture Notes in Control and Information Sciences, 2012, , 417-428.	0.6	1
135	Approximate Simulation Relations for Hybrid Systems11This research is partially supported by the RÃ©gion RhÃ´ne-Alpes (Projet CalCel) and the NSF Presidential Early CAREER (PECASE) Grant 0132716.. , 2006, , 106-111.		1
136	Singular Perturbation Approach for Linear Coupled ODE-PDE Systems. Advances in Delays and Dynamics, 2019, , 3-17.	0.4	1
137	Compositional Synthesis of Symbolic Controllers for Attractivity Specifications. , 2021, , .		1
138	Consensus with constrained convergence rate: Agreement in communities. , 2010, , .		0
139	Robust Controlled Invariance for UFAD Regulation. , 2013, , .		0
140	A new H²-norm Lyapunov function for the stability of a singularly perturbed system of two conservation laws. , 2013, , .		0
141	Numerical Computation of Lyapunov Function for Hyperbolic PDE using LMI Formulation and Polytopic Embeddings**This work has been partially supported by the LabEx PERSYVAL-Lab ANR-11-LABX-0025.. IFAC-PapersOnLine, 2015, 48, 7-12.	0.5	0
142	Bisimilar symbolic models for stochastic switched systems: A discretization-free approach. , 2015, , .		0
143	Formal Controller Synthesis from Hybrid Programs. , 2018, , .		0
144	Controller Synthesis for Nonlinear Systems with Reachability Specifications Using Monotonicity. , 2019, , .		0

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145	Symbolic observer-based controller for uncertain nonlinear systems. , 2021, , .		0
146	Timing Contracts for Multi-Core Embedded Control Systems. Lecture Notes in Control and Information Sciences, 2018, , 97-118.	0.6	0