Antonio Sala

List of Publications by Year
in descending order

148 papers	3,418 citations	279487 23 h-index	155451 55 g-index
161 all docs	161 docs citations	161 times ranked	1625 citing authors

#	Article	IF	Citations
1	Asymptotically necessary and sufficient conditions for stability and performance in fuzzy control: Applications of Polya's theorem. Fuzzy Sets and Systems, 2007, 158, 2671-2686.	1.6	539
2	Perspectives of fuzzy systems and control. Fuzzy Sets and Systems, 2005, 156, 432-444.	1.6	358
3	Polynomial Fuzzy Models for Nonlinear Control: A Taylor Series Approach. IEEE Transactions on Fuzzy Systems, 2009, 17, 1284-1295.	6.5	191
4	Computer control under time-varying sampling period: An LMI gridding approach. Automatica, 2005, 41, 2077-2082.	3.0	143
5	Relaxed Stability and Performance Conditions for Takagiâ€"Sugeno Fuzzy Systems With Knowledge on Membership Function Overlap. IEEE Transactions on Systems, Man, and Cybernetics, 2007, 37, 727-732.	5.5	138
6	On the conservativeness of fuzzy and fuzzy-polynomial control of nonlinear systems. Annual Reviews in Control, 2009, 33, 48-58.	4.4	129
7	Relaxed Stability and Performance LMI Conditions for Takagi--Sugeno Fuzzy Systems With Polynomial Constraints on Membership Function Shapes. IEEE Transactions on Fuzzy Systems, 2008, 16, 1328-1336.	6.5	122
8	Extensions to â€œvirtual reference feedback tuning: A direct method for the design of feedback controllersâ€. Automatica, 2005, 41, 1473-1476.	3.0	102
9	Extensions to â€œStability Analysis of Fuzzy Control Systems Subject to Uncertain Grades of Membershipâ€. IEEE Transactions on Systems, Man, and Cybernetics, 2008, 38, 558-563.	5.5	100
10	Fuzzy control turns 50: 10 years later. Fuzzy Sets and Systems, 2015, 281, 168-182.	1.6	93
11	A Delay-Dependent Dual-Rate PID Controller Over an Ethernet Network. IEEE Transactions on Industrial Informatics, 2011, 7, 18-29.	7.2	82
12	Relaxed LMI conditions for closed-loop fuzzy systems with tensor-product structure. Engineering Applications of Artificial Intelligence, 2007, 20, 1036-1046.	4.3	80
13	A Triangulation Approach to Asymptotically Exact Conditions for Fuzzy Summations. IEEE Transactions on Fuzzy Systems, 2009, 17, 985-994.	6.5	78
14	A retunable PID multi-rate controller for a networked control system. Information Sciences, 2009, 179, 2390-2402.	4.0	54
15	Output prediction under scarce data operation: control applications. Automatica, 1999, 35, 1671-1681.	3.0	51
16	Stability analysis of polynomial fuzzy models via polynomial fuzzy Lyapunov functions. Fuzzy Sets and Systems, 2011, 185, 5-14.	1.6	47
17	Integrating virtual reference feedback tuning into a unified closed-loop identification framework. Automatica, 2007, 43, 178-183.	3.0	45
18	Predictor-based stabilization of discrete time-varying input-delay systems. Automatica, 2012, 48, 454-457.	3.0	38

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19	New controllers and new designs for continuous-time Takagi-Sugeno models. , 2012, , .		37
20	Detection and Diagnosis of Incipient Faults in Heavy-Duty Diesel Engines. IEEE Transactions on Industrial Electronics, 2010, 57, 3522-3532.	5.2	34
21	Reactive Sliding-Mode Algorithm for Collision Avoidance in Robotic Systems. IEEE Transactions on Control Systems Technology, 2013, 21, 2391-2399.	3.2	32
22	Closed-Form Estimates of the Domain of Attraction for Nonlinear Systems via Fuzzy-Polynomial Models. IEEE Transactions on Cybernetics, 2014, 44, 526-538.	6.2	31
23	Neural networks in virtual reference tuning. Engineering Applications of Artificial Intelligence, 2011, 24, 983-995.	4.3	28
24	Robustness analysis of discrete predictor-based controllers for input-delay systems. International Journal of Systems Science, 2013, 44, 232-239.	3.7	23
25	Controller Design Under Fuzzy Pole-Placement Specifications: An Interval Arithmetic Approach. IEEE Transactions on Fuzzy Systems, 2006, 14, 822-836.	6.5	22
26	Sliding mode speed auto-regulation technique for robotic tracking. Robotics and Autonomous Systems, 2011, 59, 519-529.	3.0	22
27	Inference error minimisation: fuzzy modelling of ambiguous functions. Fuzzy Sets and Systems, 2001, 121, 95-111.	1.6	21
28	A Systematic Grey-Box Modeling Methodology via Data Reconciliation and SOS Constrained Regression. Processes, 2019, 7, 170.	1.3	20
29	Asynchronous Sensor Fusion of GPS, IMU and CAN-Based Odometry for Heavy-Duty Vehicles. IEEE Transactions on Vehicular Technology, 2021, 70, 8617-8626.	3.9	20
30	Efficiency improvement of a ground coupled heat pump system from energy management. Applied Thermal Engineering, 2011, 31, 391-398.	3.0	19
31	Asymptotically exact stabilisation for constrained discrete Takagiâ€"Sugeno systems via set-invariance. Fuzzy Sets and Systems, 2017, 316, 117-138.	1.6	19
32	Polytopic invariant and contractive sets for closed-loop discrete fuzzy systems. Journal of the Franklin Institute, 2014, 351, 3559-3576.	1.9	18
33	Performanceâ€oriented quasiâ€LPV modeling of nonlinear systems. International Journal of Robust and Nonlinear Control, 2019, 29, 1230-1248.	2.1	18
34	Application of Takagi-Sugeno observers for state estimation in a quadrotor. , 2011, , .		17
35	Integrated sliding-mode algorithms in robot tracking applications. Robotics and Computer-Integrated Manufacturing, 2013, 29, 53-62.	6.1	17
36	Sampled-data gain scheduling of continuous LTV plants. Automatica, 2009, 45, 2451-2453.	3.0	16

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37	A supervisory loop approach to fulfill workspace constraints in redundant robots. Robotics and Autonomous Systems, 2012, 60, 1-15.	3.0	16
38	Encoding fuzzy possibilistic diagnostics as a constrained optimization problem. Information Sciences, 2008, 178, 4246-4263.	4.0	15
39	Guaranteed cost control analysis and iterative design for constrained Takagi–Sugeno systems. Engineering Applications of Artificial Intelligence, 2010, 23, 1420-1427.	4.3	15
40	Stable receding-horizon scenario predictive control for Markov-jump linear systems. Automatica, 2017, 86, 121-128.	3.0	15
41	Cancellation-Based Nonquadratic Controller Design for Nonlinear Systems via Takagi–Sugeno Models. IEEE Transactions on Cybernetics, 2017, 47, 2628-2638.	6.2	15
42	A generalised integral polynomial Lyapunov function for nonlinear systems. Fuzzy Sets and Systems, 2019, 356, 77-91.	1.6	15
43	On the Stability of Nonlinear Wheel-Slip Zero Dynamics in Traction Control Systems. IEEE Transactions on Control Systems Technology, 2020, 28, 489-504.	3.2	15
44	VIRTUAL REFERENCE FEEDBACK TUNING IN RESTRICTED COMPLEXITY CONTROLLER DESIGN OF NON-MINIMUM PHASE SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 235-240.	0.4	14
45	Fuzzy logic-based expert system for diesel engine oil analysis diagnosis. Insight: Non-Destructive Testing and Condition Monitoring, 2006, 48, 462-469.	0.3	14
46	Dynamic estimations of metabolic fluxes with constraint-based models and possibility theory. Journal of Process Control, 2012, 22, 1946-1955.	1.7	14
47	Shape-independent model predictive control for Takagi–Sugeno fuzzy systems. Engineering Applications of Artificial Intelligence, 2017, 65, 493-505.	4.3	14
48	A Transfer-Function Approach to Dual-Rate Controller Design for Unstable and Non-Minimum-Phase Plants. IEEE Transactions on Control Systems Technology, 2011, 19, 1186-1194.	3.2	13
49	A path conditioning method with trap avoidance. Robotics and Autonomous Systems, 2012, 60, 862-873.	3.0	13
50	LK stability analysis of predictor-based controllers for discrete-time systems with time-varying actuator delay. Systems and Control Letters, 2013, 62, 764-769.	1.3	13
51	Hierarchical Triple-Maglev Dual-Rate Control Over a Profibus-DP Network. IEEE Transactions on Control Systems Technology, 2014, 22, 1-12.	3.2	13
52	Duality-Based Nonlinear Quadratic Control: Application to Mobile Robot Trajectory-Following. IEEE Transactions on Control Systems Technology, 2015, 23, 1494-1504.	3.2	13
53	Improving Performance Under Sampling-Rate Variations via Generalized Hold Functions. IEEE Transactions on Control Systems Technology, 2007, 15, 794-797.	3.2	12
54	Robot coordination using task-priority and sliding-mode techniques. Robotics and Computer-Integrated Manufacturing, 2014, 30, 74-89.	6.1	12

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55	Reliable controllable sets for constrained Markov-Jump Linear Systems. International Journal of Robust and Nonlinear Control, 2016, 26, 2075-2089.	2.1	12
56	Optimisation of transient and ultimate inescapable sets with polynomial boundaries for nonlinear systems. Automatica, 2016, 73, 82-87.	3.0	12
57	Subspace-Based Takagiâ€"Sugeno Modeling for Improved LMI Performance. IEEE Transactions on Fuzzy Systems, 2017, 25, 754-767.	6.5	12
58	Constraint-aware learning of policies by demonstration. International Journal of Robotics Research, 2018, 37, 1673-1689.	5.8	12
59	Fuzzy systems evaluation: The inference error approach. IEEE Transactions on Systems, Man, and Cybernetics, 1998, 28, 268-275.	5.5	11
60	Stability Analysis of Fuzzy Systems: membership-shape and polynomial approaches. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 5605-5610.	0.4	11
61	A possibilistic framework for constraint-based metabolic flux analysis. BMC Systems Biology, 2009, 3, 79.	3.0	11
62	Piecewise-Takagiâ€"Sugeno asymptotically exact estimation of the domain of attraction of nonlinear systems. Journal of the Franklin Institute, 2017, 354, 1514-1541.	1.9	11
63	Stability analysis of LPV systems: Scenario approach. Automatica, 2019, 104, 233-237.	3.0	10
64	Target-shaped possibilistic clustering applied to local-model identification. Engineering Applications of Artificial Intelligence, 2006, 19, 201-208.	4.3	9
65	Design of Multiple-Parameterisation PDC Controllers via Relaxed Conditions for Multi-Dimensional Fuzzy Summations. , 2007, , .		9
66	An Optimization Approach to Fuzzy Diagnosis: Oil Analysis Application. IEEE International Conference on Fuzzy Systems, 2007, , .	0.0	9
67	Multicriteria fuzzy-polynomial observer design for a 3DoF nonlinear electromechanical platform. Engineering Applications of Artificial Intelligence, 2014, 30, 96-106.	4.3	9
68	A fuzzy clustering algorithm enhancing local model interpretability. Soft Computing, 2007, 11, 973-983.	2.1	8
69	Finsler's relaxation for local H-infinity controller design of continuous-time Takagi-Sugeno models via non-quadratic Lyapunov functions. , 2013, , .		8
70	Introducing shape-dependent relaxed conditions in fuzzy control of nonlinear systems in Takagi-Sugeno form. , 2008, , .		7
71	Some refinements for non quadratic stabilization of continuous TS models. , 2011, , .		7
72	Fuzzy Polynomial observers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 12772-12776.	0.4	7

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73	Control synthesis for polynomial discrete-time systems under input constraints via delayed-state Lyapunov functions. International Journal of Systems Science, 2016, 47, 1176-1184.	3.7	7
74	Gain-Scheduled Control via Convex Nonlinear Parameter Varying Models. IFAC-PapersOnLine, 2019, 52, 70-75.	0.5	7
75	Local fuzzy modeling: Maximising the basin of attraction. , 2010, , .		6
76	Model Predictive Control for discrete fuzzy systems via iterative quadratic programming. , 2014, , .		6
77	Fitted Q-Function Control Methodology Based on Takagiâ€"Sugeno Systems. IEEE Transactions on Control Systems Technology, 2020, 28, 477-488.	3.2	6
78	Learning Constrained Generalizable Policies by Demonstration. , 0, , .		6
79	Analysis and Synthesis of Nonlinear Control Systems. Studies in Systems, Decision and Control, 2022, , .	0.8	6
80	Reduced-Order Controller Design via Iterative Identification and Control. European Journal of Control, 2003, 9, 105-117.	1.6	5
81	Multiple-Horizon predictive control for Markov/switched linear systems. IFAC-PapersOnLine, 2015, 48, 230-235.	0.5	5
82	Improvement of LMI controllers of Takagi-Sugeno models via Q-learning**The authors are grateful to projects DPI2011-27845-C02-01 and DPI2013-42302-R from Spanish Government, Grant PROM-ETEOII/2013/004 from Generalitat Valenciana and Ph.D. grant SENESCYT from the Government of Ecuador.. IFAC-PapersOnLine, 2016, 49, 67-72.	0.5	5
83	Drive Force and Longitudinal Dynamics Estimation in Heavy-Duty Vehicles. Sensors, 2019, 19, 3515.	2.1	5
84	Local Stability of Open- and Closed-loop Fuzzy Systems. , 2006, , .		5
85	Adaptive polyhedral meshing for approximate dynamic programming in control. Engineering Applications of Artificial Intelligence, 2022, 107, 104515.	4.3	5
86	FUZZY CLUSTERING ALGORITHM FOR LOCAL MODEL CONTROL. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 337-342.	0.4	4
87	Remote TCP/IP-based process control with time-varying sampling period. , 2006, , .		4
88	APPLICATION OF NEURAL NETWORKS TO VIRTUAL REFERENCE FEEDBACK TUNING CONTROLLER DESIGN. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 145-150.	0.4	4
89	Fuzzy Diagnosis Module Based on Interval Fuzzy Logic: Oil Analysis Application. , 2007, , 43-50.		4
90	DiseÃ±o de controladores en varios puntos de funcionamiento para una clase de modelos borrosos Takagi-Sugeno afines. RIAI - Revista Iberoamericana De Automatica E Informatica Industrial, 2007, 4, 98-105.	0.6	4

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91	Extended Rauch-Tung-Striebel controller. , 2013, , .		4
92	A new algorithm for dual-rate systems frequency response computation in discrete control systems. Applied Mathematical Modelling, 2014, 38, 5692-5704.	2.2	4
93	Choosing a Takagi-Sugeno model for improved performance. , 2015, , .		4
94	Reliability and time‐to‐failure bounds for discrete‐time constrained Markov jump linear systems. International Journal of Robust and Nonlinear Control, 2017, 27, 1773-1791.	2.1	4
95	Generalising quasi-LPV and CDI models to Quasi-Convex Difference Inclusions. IFAC-PapersOnLine, 2017, 50, 7560-7565.	0.5	4
96	A proposal for dual-rate controller design for unstable plants. , 2010, , .		3
97	Robust polytopic invariant sets for discrete fuzzy control systems. , 2013, , .		3
98	Metodología de programación dinámica aproximada para control óptimo basada en datos. RIAI - Revista Iberoamericana De Automatica E Informatica Industrial, 2019, 16, 273.	0.6	3
99	Engine-Based Input-Output Linearization for Traction Control Systems. IFAC-PapersOnLine, 2020, 53, 14055-14060.	0.5	3
100	An Alternative Aggregation Algorithm for Fuzzy Local Models. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 19-24.	0.4	2
101	FAULT-TOLERANT TIME-INVARIANT FEEDBACK CONTROL. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 61-66.	0.4	2
102	CONTROL WITH ON/OFF SENSORS AND ACTUATORS: AN ELLIPSOID OBSERVER PLUS SLIDING-MODE CONTROL APPROACH. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 61-66.	0.4	2
103	Frequency Response of Discrete Dual-Rate Systems. , 2008, , .		2
104	Some remarks on polynomial fuzzy control. , 2009, , .		2
105	Reliable fault-tolerant predictive control for Markov-jump Linear Systems. , 2014, , .		2
106	Invariant sets of nonlinear models via piecewise affine Takagi-Sugeno models. , 2015, , .		2
107	A generalisation of Line-Integral Lyapunov Function for Takagi-Sugeno systems " "The authors gratefully to the financial support of Spanish ministry of Economy and European Union, grant DPI2016-81002-R (AEI/FEDER, UE), the CONACyT/COECYT Sonora scholarship 383252, Project Ciencia Básica SEP-CONACYT CB-168406, and the scholarship GRISOLIA/2014/006 from Generalitat Valenciana (regional) Tj ETQq1 1 0.784314 rgBT	0.5	2
108	Improving LMI controllers for discrete nonlinear systems using policy iteration. , 2017, , .		2

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109	Minimal Controllable Set for Takagi-Sugeno Fuzzy Systems with disturbances. IFAC-PapersOnLine, 2019, 52, 55-60.	0.5	2
110	On the Frontier Between Kalman Conjecture and Markus-Yamabe Conjecture. , 2021, 5, 1309-1314.		2
111	Is bridging the gap between fuzzy and nonlinear control possible (partially)?. , 2007, , .		2
112	Estimating domains of attraction of fuzzy polynomial systems. , 2011, , .		2
113	Perspectives of fuzzy control: lights and shadows. , 0, , .		1
114	Modal fuzzy quantities and applications to control. , 2006, , .		1
115	REDUCING THE GAP BETWEEN FUZZY AND NONLINEAR CONTROL. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 121-126.	0.4	1
116	Maglev platform networked control: A Profibus DP application. , 2010, , .		1
117	Improvements on local non-quadratic stability of Takagi-Sugeno models. , 2010, , .		1
118	Switching algorithm for fast robotic tracking under joint speed constraints. , 2010, , .		1
119	Linear Matrix Inequalities in Multirate Control over Networks. Mathematical Problems in Engineering, 2012, 2012, 1-22.	0.6	1
120	Discrete fuzzy polynomial observers. , 2012, , .		1
121	Inescapable-set Estimation for Nonlinear Systems with Non-vanishing Disturbances. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 462-467.	0.4	1
122	Shape-dependent maximal controllable sets for constrained discrete-time TS systems. , 2015, , .		1
123	Optimal-Performance Takagi-Sugeno Models via the LMI Null Space**The authors are grateful to project DPI2011-27845-C02-01 from Spanish Government, Grant PROMETEOII/2013/004 from Gener-alitat Valenciana, the Project SEP-CONACYT CB-168406, and the scholarship program Santiago GrisolÃa GRISOLIA/2014/006.. IFAC-PapersOnLine, 2016, 49, 13-18.	0.5	1
124	A Sum-Of-Squares Constrained Regression Approach for Process Modeling. IFAC-PapersOnLine, 2019, 52, 754-759.	0.5	1
125	Exact Takagi-Sugeno descriptor models of recurrent high-order neural networks for control applications. Computational and Applied Mathematics, 2020, 39, 1.	1.0	1
126	Remote TCP/IP-based process control with time-varying sampling period. , 2006, , .		1

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127	Polynomial Fuzzy Systems: Stability and Control. Atlantis Computational Intelligence Systems, 2014, , 95-115.	0.5	1
128	Stability Analysis. Studies in Systems, Decision and Control, 2022, , 97-167.	0.8	1
129	Método de error de Bellman con ponderación de volumen para mallado adaptativo en programación dinámica aproximada. RIAI - Revista Iberoamericana De Automatica E Informatica Industrial, 2021, 19, 37-47.	0.6	1
130	Analysis of rulebase coherence in fuzzy control systems. Annual Review in Automatic Programming, 1994, 19, 79-84.	0.2	0
131	FUZZY CONTROLLERS WITH NON-CONVENTIONAL (SCARCE) MEASUREMENTS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 217-222.	0.4	0
132	Preface to the special section on fuzzy system applications in control. Control Engineering Practice, 2004, 12, 605.	3.2	0
133	Fuzzy-logic diagnostic rules: a constrained optimisation viewpoint. , 2007, , .		0
134	Applications of possibilistic reasoning to intelligent system monitoring: a case study. , 2009, , .		0
135	A software application for possibilistic fuzzy diagnosis in complex system. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 522-527.	0.4	0
136	Guaranteed Cost Control For Constrained Takagi-Sugeno Fuzzy Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 325-330.	0.4	0
137	Enhancing integrity in multivariable process control under actuator failures. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 1599-1604.	0.4	0
138	Time invariant control of MIMO systems under random transient failures. , 2010, , .		0
139	The polytopic/fuzzy polynomial approach for non-linear control: Advantages and drawbacks. , 2010, , .		0
140	Guaranteed Cost Piecewise Fuzzy Controller Design**. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 12789-12794.	0.4	0
141	Spherical domain of attraction estimation for nonlinear systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 108-114.	0.4	0
142	A reactive geometric-invariance approach for robot coordination. , 2014, , .		0
143	Learning Upper-Level Policy using Importance Sampling-based Policy Search Method. , 2018, , .		0
144	Set‐based gain‐scheduled control via quasi‐convex difference inclusions. International Journal of Robust and Nonlinear Control, 2020, , .	2.1	0

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145	Application of SOS-constrained regression to model unknown reaction kinetics. IFAC-PapersOnLine, 2021, 54, 395-400.	0.5	0
146	Perspectives of Multivariable Fuzzy Control. , 2011, , 283-314.		0
147	Encoding Fuzzy Diagnosis Rules as Optimisation Problems. , 2008, , 49-58.		0
148	Modelling via Convex Structures. Studies in Systems, Decision and Control, 2022, , 23-96.	0.8	0