Francisco C Santos

List of Publications by Year
in descending order

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135 papers	8,342 citations	87723 38 h-index	46693 89 g-index

137 all docs	137 docs citations	137 times ranked	2612 citing authors

#	Article	IF	Citations
1	Scale-Free Networks Provide a Unifying Framework for the Emergence of Cooperation. Physical Review Letters, 2005, 95, 098104.	2.9	1,364
2	Social diversity promotes the emergence of cooperation in public goods games. Nature, 2008, 454, 213-216.	13.7	1,144
3	Evolutionary dynamics of social dilemmas in structured heterogeneous populations. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 3490-3494.	3.3	834
4	Cooperation Prevails When Individuals Adjust Their Social Ties. PLoS Computational Biology, 2006, 2, e140.	1.5	440
5	Graph topology plays a determinant role in the evolution of cooperation. Proceedings of the Royal Society B: Biological Sciences, 2006, 273, 51-55.	1.2	311
6	Evolutionary dynamics of collective action in N -person stag hunt dilemmas. Proceedings of the Royal Society B: Biological Sciences, 2009, 276, 315-321.	1.2	285
7	Epidemic spreading and cooperation dynamics on homogeneous small-world networks. Physical Review E, 2005, 72, 056128.	0.8	241
8	A new route to the evolution of cooperation. Journal of Evolutionary Biology, 2006, 19, 726-733.	0.8	219
9	Risk of collective failure provides an escape from the tragedy of the commons. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 10421-10425.	3.3	211
10	Evolution of cooperation under -person snowdrift games. Journal of Theoretical Biology, 2009, 260, 581-588.	0.8	195
11	The role of diversity in the evolution of cooperation. Journal of Theoretical Biology, 2012, 299, 88-96.	0.8	158
12	Reacting Differently to Adverse Ties Promotes Cooperation in Social Networks. Physical Review Letters, 2009, 102, 058105.	2.9	146
13	A bottom-up institutional approach to cooperative governance of risky commons. Nature Climate Change, 2013, 3, 797-801.	8.1	137
14	Stern-Judging: A Simple, Successful Norm Which Promotes Cooperation under Indirect Reciprocity. PLoS Computational Biology, 2006, 2, e178.	1.5	134
15	Social norm complexity and past reputations in the evolution of cooperation. Nature, 2018, 555, 242-245.	13.7	130
16	Climate policies under wealth inequality. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2212-2216.	3.3	112
17	Climate change governance, cooperation and self-organization. Physics of Life Reviews, 2014, 11, 573-586.	1.5	103
18	Cancer phenotype as the outcome of an evolutionary game between normal and malignant cells. British Journal of Cancer, 2009, 101, 1130-1136.	2.9	101

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19	The evolution of norms. Journal of Theoretical Biology, 2006, 241, 233-240.	0.8	87
20	Emergence of Fairness in Repeated Group Interactions. Physical Review Letters, 2012, 108, 158104.	2.9	83
21	Paths to the adoption of electric vehicles: An evolutionary game theoretical approach. Transportation Research Part B: Methodological, 2018, 113, 24-33.	2.8	79
22	Dynamics of N-person snowdrift games in structured populations. Journal of Theoretical Biology, 2012, 315, 81-86.	0.8	74
23	The ecology of cancer from an evolutionary game theory perspective. Interface Focus, 2014, 4, 20140019.	1.5	68
24	Linking Individual and Collective Behavior in Adaptive Social Networks. Physical Review Letters, 2016, 116, 128702.	2.9	59
25	Co-evolution of pre-play signaling and cooperation. Journal of Theoretical Biology, 2011, 274, 30-35.	0.8	57
26	From Local to Global Dilemmas in Social Networks. PLoS ONE, 2012, 7, e32114.	1.1	56
27	Good Agreements Make Good Friends. Scientific Reports, 2013, 3, 2695.	1.6	53
28	Adaptive Contact Networks Change Effective Disease Infectiousness and Dynamics. PLoS Computational Biology, 2010, 6, e1000895.	1.5	52
29	Population Structure Induces a Symmetry Breaking Favoring the Emergence of Cooperation. PLoS Computational Biology, 2009, 5, e1000596.	1.5	51
30	Social Norms of Cooperation in Small-Scale Societies. PLoS Computational Biology, 2016, 12, e1004709.	1.5	49
31	EVOLUTIONARY DYNAMICS OF CLIMATE CHANGE UNDER COLLECTIVE-RISK DILEMMAS. Mathematical Models and Methods in Applied Sciences, 2012, 22, 1140004.	1.7	45
32	Origin of Peer Influence in Social Networks. Physical Review Letters, 2014, 112, 098702.	2.9	45
33	The evolution of prompt reaction to adverse ties. BMC Evolutionary Biology, 2008, 8, 287.	3.2	44
34	How selection pressure changes the nature of social dilemmas in structured populations. New Journal of Physics, 2012, 14, 073035.	1.2	44
35	Reward and punishment in climate change dilemmas. Scientific Reports, 2019, 9, 16193.	1.6	44
36	Fractal cartography of urban areas. Scientific Reports, 2012, 2, 527.	1.6	43

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37	Evolution of All-or-None Strategies in Repeated Public Goods Dilemmas. PLoS Computational Biology, 2014, 10, e1003945.	1.5	40
38	Corpus-Based Intention Recognition in Cooperation Dilemmas. Artificial Life, 2012, 18, 365-383.	1.0	38
39	Escaping the tragedy of the commons via directed investments. Journal of Theoretical Biology, 2011, 287, 37-41.	0.8	33
40	Evolution of collective action in adaptive social structures. Scientific Reports, 2013, 3, 1521.	1.6	33
41	Synergy between intention recognition and commitments in cooperation dilemmas. Scientific Reports, 2015, 5, 9312.	1.6	33
42	Selection pressure transforms the nature of social dilemmas in adaptive networks. New Journal of Physics, 2011, 13, 013007.	1.2	30
43	Evolutionary dynamics of group fairness. Journal of Theoretical Biology, 2015, 378, 96-102.	0.8	30
44	Evolution of cooperation under indirect reciprocity and arbitrary exploration rates. Scientific Reports, 2016, 6, 37517.	1.6	30
45	Individual memory and the emergence of cooperation. Animal Behaviour, 2013, 85, 233-239.	0.8	29
46	Cognitive strategies take advantage of the cooperative potential of heterogeneous networks. New Journal of Physics, 2012, 14, 063031.	1.2	28
47	Timing Uncertainty in Collective Risk Dilemmas Encourages Group Reciprocation and Polarization. IScience, 2020, 23, 101752.	1.9	28
48	Cooperation dynamics of polycentric climate governance. Mathematical Models and Methods in Applied Sciences, 2015, 25, 2503-2517.	1.7	26
49	Stochastic Dynamics through Hierarchically Embedded Markov Chains. Physical Review Letters, 2017, 118, 058301.	2.9	26
50	Governance of risky public goods under graduated punishment. Journal of Theoretical Biology, 2020, 505, 110423.	0.8	24
51	Evolution of Collective Fairness in Hybrid Populations of Humans and Agents. Proceedings of the AAAI Conference on Artificial Intelligence, 2019, 33, 6146-6153.	3.6	23
52	Reward from Punishment Does Not Emerge at All Costs. PLoS Computational Biology, 2013, 9, e1002868.	1.5	21
53	Co-evolutionary Dynamics of Collective Action with Signaling for a Quorum. PLoS Computational Biology, 2015, 11, e1004101.	1.5	20
54	The complexity of human cooperation under indirect reciprocity. Philosophical Transactions of the Royal Society B: Biological Sciences, 2021, 376, 20200291.	1.8	20

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55	Network Dependence of the Dilemmas Of Cooperation. AIP Conference Proceedings, 2005, , .	0.3	19
56	How affinity influences tolerance in an idiotypic network. Journal of Theoretical Biology, 2007, 249, 422-436.	0.8	18
57	An Evolutionary Game Theoretic Approach to Multi-Sector Coordination and Self-Organization. Entropy, 2016, 18, 152.	1.1	18
58	Mediating artificial intelligence developments through negative and positive incentives. PLoS ONE, 2021, 16, e0244592.	1.1	18
59	To Regulate or Not: A Social Dynamics Analysis of an Idealised AI Race. Journal of Artificial Intelligence Research, 0, 69, 881-921.	7.0	18
60	Growing biological networks: Beyond the gene-duplication model. Journal of Theoretical Biology, 2006, 241, 488-505.	0.8	15
61	Coevolution of Cooperation, Response to Adverse Social Ties and Network Structure. Games, 2010, 1, 317-337.	0.4	15
62	Incipient Cognition Solves the Spatial Reciprocity Conundrum of Cooperation. PLoS ONE, 2011, 6, e17939.	1.1	15
63	Intention recognition, commitment and the evolution of cooperation. , 2012, , .		14
64	Voluntary safety commitments provide an escape from over-regulation in AI development. Technology in Society, 2022, 68, 101843.	4.8	14
65	Social Odometry: Imitation Based Odometry in Collective Robotics. International Journal of Advanced Robotic Systems, 2009, 6, 11.	1.3	13
66	Emotion expressions shape human social norms and reputations. IScience, 2021, 24, 102141.	1.9	13
67	Fostering Cooperation in Structured Populations Through Local and Global Interference Strategies. , 2018, , .		13
68	Urban Dynamics, Fractals and Generalized Entropy. Entropy, 2013, 15, 2679-2697.	1.1	12
69	Dynamics of informal risk sharing in collective index insurance. Nature Sustainability, 2021, 4, 426-432.	11.5	12
70	Paradigm shifts and the interplay between state, business and civil sectors. Royal Society Open Science, 2016, 3, 160753.	1.1	11
71	Navigating the landscape of multiplayer games. Nature Communications, 2020, 11, 5603.	5.8	11
72	Evolutionary Games in Self-Organizing Populations. Understanding Complex Systems, 2009, , 253-267.	0.3	11

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73	Emergence of cooperation via intention recognition, commitment and apologyÂâ€“ AÂresearch summary. AI Communications, 2015, 28, 709-715.	0.8	10
74	Tolerance vs Intolerance: How Affinity Defines Topology in an Idiotypic Network. Lecture Notes in Computer Science, 2006, , 109-121.	1.0	9
75	Dynamics of Fairness in Groups of Autonomous Learning Agents. Lecture Notes in Computer Science, 2016, , 107-126.	1.0	9
76	Picky losers and carefree winners prevail in collective risk dilemmas with partner selection. Autonomous Agents and Multi-Agent Systems, 2020, 34, 1.	1.3	9
77	Exogenous Rewards for Promoting Cooperation in Scale-Free Networks. , 2019, , .		9
78	Artificial intelligence development races in heterogeneous settings. Scientific Reports, 2022, 12, 1723.	1.6	9
79	LINES: muLtImodal traNsportation rEsilience analySis. Sustainability, 2022, 14, 7891.	1.6	8
80	Structural power and the evolution of collective fairness in social networks. PLoS ONE, 2017, 12, e0175687.	1.1	7
81	Norms for beneficial A.I.: A computational analysis of the societal value alignment problem. AI Communications, 2020, 33, 155-171.	0.8	7
82	Delegation to artificial agents fosters prosocial behaviors in the collective risk dilemma. Scientific Reports, 2022, 12, 8492.	1.6	7
83	Structure versus function: a topological perspective on immune networks. Natural Computing, 2010, 9, 603-624.	1.8	6
84	Evolutionary Dynamics of Collective Action. , 2011, , 119-138.		6
85	Evolutionary dynamics of collective index insurance. Journal of Mathematical Biology, 2016, 72, 997-1010.	0.8	6
86	Signalling boosts the evolution of cooperation in repeated group interactions. Journal of the Royal Society Interface, 2020, 17, 20200635.	1.5	6
87	Spanning Edge Betweenness in Practice. Studies in Computational Intelligence, 2016, , 3-10.	0.7	6
88	Cooperation dynamics under pandemic risks and heterogeneous economic interdependence. Chaos, Solitons and Fractals, 2022, 155, 111655.	2.5	6
89	Eliciting Fairness in N-Player Network Games through Degree-Based Role Assignment. Complexity, 2021, 2021, 1-11.	0.9	5
90	Counterfactual Thinking in Cooperation Dynamics. Studies in Applied Philosophy, Epistemology and Rational Ethics, 2019, , 69-82.	0.2	5

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91	A Multi-level Selection Model for the Emergence of Social Norms. Lecture Notes in Computer Science, 2007, , 525-534.	1.0	5
92	Social Odometry in Populations of Autonomous Robots. Lecture Notes in Computer Science, 2008, , 371-378.	1.0	5
93	Reply: Evolutionary game theory: lessons and limitations, a cancer perspective. British Journal of Cancer, 2009, 101, 2062-2063.	2.9	4
94	Complex Systems of Mindful Entities: On Intention Recognition and Commitment. Studies in Applied Philosophy, Epistemology and Rational Ethics, 2014, , 499-525.	0.2	4
95	Stable leaders pave the way for cooperation under time-dependent exploration rates. Royal Society Open Science, 2021, 8, 200910.	1.1	4
96	Neutrino helicity asymmetries in leptogenesis. Physical Review D, 2005, 71, .	1.6	3
97	Emergence of Social Balance in Signed Networks. Springer Proceedings in Complexity, 2017, , 185-192.	0.2	3
98	Modeling behavioral experiments on uncertainty and cooperation with population-based reinforcement learning. Simulation Modelling Practice and Theory, 2021, 109, 102299.	2.2	3
99	A mathematical look at empathy. ELife, 2019, 8, .	2.8	3
100	Evolutionary Dynamics of Collective Action in N-person Stag Hunt Dilemmas. , 2014, , 110-127.		3
101	Climate governance as a complex adaptive system. Physics of Life Reviews, 2014, 11, 595-597.	1.5	2
102	Using Spark and GraphX to Parallelize Large-Scale Simulations of Bacterial Populations over Host Contact Networks. Lecture Notes in Computer Science, 2017, , 591-600.	1.0	2
103	Structural and temporal patterns of the first global trading market. Royal Society Open Science, 2018, 5, 180577.	1.1	2
104	Capturing Financial Volatility Through Simple Network Measures. Studies in Computational Intelligence, 2019, , 534-546.	0.7	2
105	Evolution of Cooperation in a Population of Selfish Adaptive Agents. Lecture Notes in Computer Science, 2007, , 535-544.	1.0	2
106	Coordinating towards a Common Good. , 2010, , .		1
107	Evolution of Fairness and Conditional Cooperation in Public Goods Dilemmas. Springer Proceedings in Complexity, 2013, , 827-830.	0.2	1
108	Multiplayer Ultimatum Games and Collective Fairness in Networked Communities. , 2018, , .		1

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109	Large-Scale Simulations of Bacterial Populations Over Complex Networks. Journal of Computational Biology, 2018, 25, 850-861.	0.8	1
110	Walk the Talk! Exploring (Mis)Alignment of Words and Deeds by Robotic Teammates in a Public Goods Game. , 2019, , .		1
111	Risk sensitivity and theory of mind in human coordination. PLoS Computational Biology, 2021, 17, e1009167.	1.5	1
112	To Grip, or Not to Grip: Evolving Coordination in Autonomous Robots. Lecture Notes in Computer Science, 2011, , 205-212.	1.0	1
113	Self-organized game dynamics in complex networks. , 2013, , .		1
114	Emergence of Cooperation in Adaptive Social Networks with Behavioral Diversity. Lecture Notes in Computer Science, 2011, , 434-441.	1.0	1
115	The Messianic Effect of Pathological Altruism. , 2011, , 301-310.		1
116	Collective Evolutionary Dynamics and Spatial Reciprocity under the N-Person Snowdrift Game. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 178-188.	0.2	1
117	The coevolution of loyalty and cooperation. , 2009, , .		0
118	The Role of Execution Errors in Populations of Ultimatum Bargaining Agents. Lecture Notes in Computer Science, 2017, , 36-50.	1.0	0
119	Disease Spreading in Time-Evolving Networked Communities. Theoretical Biology, 2017, , 291-316.	0.0	0
120	Growing Biochemical Networks: Identifying the Intrinsic Properties. Lecture Notes in Computer Science, 2005, , 864-873.	1.0	0
121	Networks Regulating Networks: The Effects of Constraints on Topological Evolution. Lecture Notes in Computer Science, 2007, , 956-965.	1.0	0
122	Evolution of Cooperation in Adaptive Social Networks. World Scientific Lecture Notes in Complex Systems, 2009, , 373-392.	0.1	0
123	Evolving the Asymmetry of the Prisonerâ€™s Dilemma Game in Adaptive Social Structures. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 205-212.	0.2	0
124	Tracking the Evolution of Cooperation in Complex Networked Populations. Lecture Notes in Computer Science, 2012, , 86-96.	1.0	0
125	Evolutionary Dynamics of Cooperation under the Distributed Prisonerâ€™s Dilemma. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 523-532.	0.2	0
126	Behavioral Dynamics under Climate Change Dilemmas. , 2013, , 113-124.		0

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127	Bootstrapping back the climate with self-organization. , 0, , .		0
128	The Universality of Peer-Influence in Social Networks. , 0, , .		0
129	Linking Individual to Collective Behavior in Complex Adaptive Networks. , 2016, , .		0
130	Climate Change Governance, Cooperation and Self-organization. , 2016, , .		0
131	Cooperation and Reputation in Primitive Societies. , 2016, , .		0
132	Human Cooperation and the Complexity of Moral Codes. , 2018, , .		0
133	Promoting Cooperation through External Interference. , 2019, , .		0
134	A Population Dynamics Approach toÂViral Marketing. Studies in Computational Intelligence, 2020, , 399-411.	0.7	0
135	Adoption Dynamics and Societal Impact of AI Systems in Complex Networks. , 2020, , .		0