

Francisco C Santos

List of Publications by Year in descending order

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Version: 2024-02-01

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	Cooperation dynamics under pandemic risks and heterogeneous economic interdependence. <i>Chaos, Solitons and Fractals</i> , 2022, 155, 111655.	2.5	6
2	Voluntary safety commitments provide an escape from over-regulation in AI development. <i>Technology in Society</i> , 2022, 68, 101843.	4.8	14
3	Artificial intelligence development races in heterogeneous settings. <i>Scientific Reports</i> , 2022, 12, 1723.	1.6	9
4	Delegation to artificial agents fosters prosocial behaviors in the collective risk dilemma. <i>Scientific Reports</i> , 2022, 12, 8492.	1.6	7
5	LINES: muLtlmodal traNsportation rEsilience analySis. <i>Sustainability</i> , 2022, 14, 7891.	1.6	8
6	Mediating artificial intelligence developments through negative and positive incentives. <i>PLoS ONE</i> , 2021, 16, e0244592.	1.1	18
7	Stable leaders pave the way for cooperation under time-dependent exploration rates. <i>Royal Society Open Science</i> , 2021, 8, 200910.	1.1	4
8	Emotion expressions shape human social norms and reputations. <i>IScience</i> , 2021, 24, 102141.	1.9	13
9	Modeling behavioral experiments on uncertainty and cooperation with population-based reinforcement learning. <i>Simulation Modelling Practice and Theory</i> , 2021, 109, 102299.	2.2	3
10	Risk sensitivity and theory of mind in human coordination. <i>PLoS Computational Biology</i> , 2021, 17, e1009167.	1.5	1
11	Eliciting Fairness in N-Player Network Games through Degree-Based Role Assignment. <i>Complexity</i> , 2021, 2021, 1-11.	0.9	5
12	Dynamics of informal risk sharing in collective index insurance. <i>Nature Sustainability</i> , 2021, 4, 426-432.	11.5	12
13	The complexity of human cooperation under indirect reciprocity. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2021, 376, 20200291.	1.8	20
14	Governance of risky public goods under graduated punishment. <i>Journal of Theoretical Biology</i> , 2020, 505, 110423.	0.8	24
15	Signalling boosts the evolution of cooperation in repeated group interactions. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20200635.	1.5	6
16	Norms for beneficial A.I.: A computational analysis of the societal value alignment problem. <i>AI Communications</i> , 2020, 33, 155-171.	0.8	7
17	Timing Uncertainty in Collective Risk Dilemmas Encourages Group Reciprocation and Polarization. <i>IScience</i> , 2020, 23, 101752.	1.9	28
18	Navigating the landscape of multiplayer games. <i>Nature Communications</i> , 2020, 11, 5603.	5.8	11

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19	Picky losers and carefree winners prevail in collective risk dilemmas with partner selection. <i>Autonomous Agents and Multi-Agent Systems</i> , 2020, 34, 1.	1.3	9
20	A Population Dynamics Approach to Viral Marketing. <i>Studies in Computational Intelligence</i> , 2020, , 399-411.	0.7	0
21	Adoption Dynamics and Societal Impact of AI Systems in Complex Networks. , 2020, , .		0
22	Evolution of Collective Fairness in Hybrid Populations of Humans and Agents. <i>Proceedings of the AAAI Conference on Artificial Intelligence</i> , 2019, 33, 6146-6153.	3.6	23
23	Walk the Talk! Exploring (Mis)Alignment of Words and Deeds by Robotic Teammates in a Public Goods Game. , 2019, , .		1
24	Reward and punishment in climate change dilemmas. <i>Scientific Reports</i> , 2019, 9, 16193.	1.6	44
25	Capturing Financial Volatility Through Simple Network Measures. <i>Studies in Computational Intelligence</i> , 2019, , 534-546.	0.7	2
26	Counterfactual Thinking in Cooperation Dynamics. <i>Studies in Applied Philosophy, Epistemology and Rational Ethics</i> , 2019, , 69-82.	0.2	5
27	Exogenous Rewards for Promoting Cooperation in Scale-Free Networks. , 2019, , .		9
28	A mathematical look at empathy. <i>ELife</i> , 2019, 8, .	2.8	3
29	Promoting Cooperation through External Interference. , 2019, , .		0
30	Social norm complexity and past reputations in the evolution of cooperation. <i>Nature</i> , 2018, 555, 242-245.	13.7	130
31	Multiplayer Ultimatum Games and Collective Fairness in Networked Communities. , 2018, , .		1
32	Structural and temporal patterns of the first global trading market. <i>Royal Society Open Science</i> , 2018, 5, 180577.	1.1	2
33	Paths to the adoption of electric vehicles: An evolutionary game theoretical approach. <i>Transportation Research Part B: Methodological</i> , 2018, 113, 24-33.	2.8	79
34	Large-Scale Simulations of Bacterial Populations Over Complex Networks. <i>Journal of Computational Biology</i> , 2018, 25, 850-861.	0.8	1
35	Fostering Cooperation in Structured Populations Through Local and Global Interference Strategies. , 2018, , .		13
36	Human Cooperation and the Complexity of Moral Codes. , 2018, , .		0

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37	Stochastic Dynamics through Hierarchically Embedded Markov Chains. <i>Physical Review Letters</i> , 2017, 118, 058301.	2.9	26
38	Emergence of Social Balance in Signed Networks. <i>Springer Proceedings in Complexity</i> , 2017, , 185-192.	0.2	3
39	The Role of Execution Errors in Populations of Ultimatum Bargaining Agents. <i>Lecture Notes in Computer Science</i> , 2017, , 36-50.	1.0	0
40	Disease Spreading in Time-Evolving Networked Communities. <i>Theoretical Biology</i> , 2017, , 291-316.	0.0	0
41	Using Spark and GraphX to Parallelize Large-Scale Simulations of Bacterial Populations over Host Contact Networks. <i>Lecture Notes in Computer Science</i> , 2017, , 591-600.	1.0	2
42	Structural power and the evolution of collective fairness in social networks. <i>PLoS ONE</i> , 2017, 12, e0175687.	1.1	7
43	Paradigm shifts and the interplay between state, business and civil sectors. <i>Royal Society Open Science</i> , 2016, 3, 160753.	1.1	11
44	An Evolutionary Game Theoretic Approach to Multi-Sector Coordination and Self-Organization. <i>Entropy</i> , 2016, 18, 152.	1.1	18
45	Evolution of cooperation under indirect reciprocity and arbitrary exploration rates. <i>Scientific Reports</i> , 2016, 6, 37517.	1.6	30
46	Dynamics of Fairness in Groups of Autonomous Learning Agents. <i>Lecture Notes in Computer Science</i> , 2016, , 107-126.	1.0	9
47	Linking Individual and Collective Behavior in Adaptive Social Networks. <i>Physical Review Letters</i> , 2016, 116, 128702.	2.9	59
48	Evolutionary dynamics of collective index insurance. <i>Journal of Mathematical Biology</i> , 2016, 72, 997-1010.	0.8	6
49	Spanning Edge Betweenness in Practice. <i>Studies in Computational Intelligence</i> , 2016, , 3-10.	0.7	6
50	Social Norms of Cooperation in Small-Scale Societies. <i>PLoS Computational Biology</i> , 2016, 12, e1004709.	1.5	49
51	Linking Individual to Collective Behavior in Complex Adaptive Networks. , 2016, , .		0
52	Climate Change Governance, Cooperation and Self-organization. , 2016, , .		0
53	Cooperation and Reputation in Primitive Societies. , 2016, , .		0
54	Synergy between intention recognition and commitments in cooperation dilemmas. <i>Scientific Reports</i> , 2015, 5, 9312.	1.6	33

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55	Emergence of cooperation via intention recognition, commitment and apology – research summary. <i>AI Communications</i> , 2015, 28, 709-715.	0.8	10
56	Co-evolutionary Dynamics of Collective Action with Signaling for a Quorum. <i>PLoS Computational Biology</i> , 2015, 11, e1004101.	1.5	20
57	Evolutionary dynamics of group fairness. <i>Journal of Theoretical Biology</i> , 2015, 378, 96-102.	0.8	30
58	Cooperation dynamics of polycentric climate governance. <i>Mathematical Models and Methods in Applied Sciences</i> , 2015, 25, 2503-2517.	1.7	26
59	Complex Systems of Mindful Entities: On Intention Recognition and Commitment. <i>Studies in Applied Philosophy, Epistemology and Rational Ethics</i> , 2014, , 499-525.	0.2	4
60	Evolution of All-or-None Strategies in Repeated Public Goods Dilemmas. <i>PLoS Computational Biology</i> , 2014, 10, e1003945.	1.5	40
61	Origin of Peer Influence in Social Networks. <i>Physical Review Letters</i> , 2014, 112, 098702.	2.9	45
62	Climate policies under wealth inequality. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 2212-2216.	3.3	112
63	Climate governance as a complex adaptive system. <i>Physics of Life Reviews</i> , 2014, 11, 595-597.	1.5	2
64	The ecology of cancer from an evolutionary game theory perspective. <i>Interface Focus</i> , 2014, 4, 20140019.	1.5	68
65	Climate change governance, cooperation and self-organization. <i>Physics of Life Reviews</i> , 2014, 11, 573-586.	1.5	103
66	Evolutionary Dynamics of Collective Action in N-person Stag Hunt Dilemmas. , 2014, , 110-127.		3
67	A bottom-up institutional approach to cooperative governance of risky commons. <i>Nature Climate Change</i> , 2013, 3, 797-801.	8.1	137
68	Evolution of Fairness and Conditional Cooperation in Public Goods Dilemmas. <i>Springer Proceedings in Complexity</i> , 2013, , 827-830.	0.2	1
69	Individual memory and the emergence of cooperation. <i>Animal Behaviour</i> , 2013, 85, 233-239.	0.8	29
70	Urban Dynamics, Fractals and Generalized Entropy. <i>Entropy</i> , 2013, 15, 2679-2697.	1.1	12
71	Reward from Punishment Does Not Emerge at All Costs. <i>PLoS Computational Biology</i> , 2013, 9, e1002868.	1.5	21
72	Good Agreements Make Good Friends. <i>Scientific Reports</i> , 2013, 3, 2695.	1.6	53

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73	Evolution of collective action in adaptive social structures. Scientific Reports, 2013, 3, 1521.	1.6	33
74	Self-organized game dynamics in complex networks. , 2013, , .		1
75	Behavioral Dynamics under Climate Change Dilemmas. , 2013, , 113-124.		0
76	Cognitive strategies take advantage of the cooperative potential of heterogeneous networks. New Journal of Physics, 2012, 14, 063031.	1.2	28
77	How selection pressure changes the nature of social dilemmas in structured populations. New Journal of Physics, 2012, 14, 073035.	1.2	44
78	Emergence of Fairness in Repeated Group Interactions. Physical Review Letters, 2012, 108, 158104.	2.9	83
79	EVOLUTIONARY DYNAMICS OF CLIMATE CHANGE UNDER COLLECTIVE-RISK DILEMMAS. Mathematical Models and Methods in Applied Sciences, 2012, 22, 1140004.	1.7	45
80	Fractal cartography of urban areas. Scientific Reports, 2012, 2, 527.	1.6	43
81	Corpus-Based Intention Recognition in Cooperation Dilemmas. Artificial Life, 2012, 18, 365-383.	1.0	38
82	Dynamics of N-person snowdrift games in structured populations. Journal of Theoretical Biology, 2012, 315, 81-86.	0.8	74
83	Intention recognition, commitment and the evolution of cooperation. , 2012, , .		14
84	From Local to Global Dilemmas in Social Networks. PLoS ONE, 2012, 7, e32114.	1.1	56
85	The role of diversity in the evolution of cooperation. Journal of Theoretical Biology, 2012, 299, 88-96.	0.8	158
86	Evolving the Asymmetry of the Prisoner'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
87	Tracking the Evolution of Cooperation in Complex Networked Populations. Lecture Notes in Computer Science, 2012, , 86-96.	1.0	0
88	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
89	Evolutionary Dynamics of Cooperation under the Distributed Prisoner's Dilemma. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 523-532.	0.2	0
90	Evolutionary Dynamics of Collective Action. , 2011, , 119-138.		6

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91	Incipient Cognition Solves the Spatial Reciprocity Conundrum of Cooperation. PLoS ONE, 2011, 6, e17939.	1.1	15
92	Escaping the tragedy of the commons via directed investments. Journal of Theoretical Biology, 2011, 287, 37-41.	0.8	33
93	Co-evolution of pre-play signaling and cooperation. Journal of Theoretical Biology, 2011, 274, 30-35.	0.8	57
94	Selection pressure transforms the nature of social dilemmas in adaptive networks. New Journal of Physics, 2011, 13, 013007.	1.2	30
95	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
96	To Grip, or Not to Grip: Evolving Coordination in Autonomous Robots. Lecture Notes in Computer Science, 2011, , 205-212.	1.0	1
97	Emergence of Cooperation in Adaptive Social Networks with Behavioral Diversity. Lecture Notes in Computer Science, 2011, , 434-441.	1.0	1
98	The Messianic Effect of Pathological Altruism. , 2011, , 301-310.		1
99	Structure versus function: a topological perspective on immune networks. Natural Computing, 2010, 9, 603-624.	1.8	6
100	Coevolution of Cooperation, Response to Adverse Social Ties and Network Structure. Games, 2010, 1, 317-337.	0.4	15
101	Adaptive Contact Networks Change Effective Disease Infectiousness and Dynamics. PLoS Computational Biology, 2010, 6, e1000895.	1.5	52
102	Coordinating towards a Common Good. , 2010, , .		1
103	Reacting Differently to Adverse Ties Promotes Cooperation in Social Networks. Physical Review Letters, 2009, 102, 058105.	2.9	146
104	Reply: Evolutionary game theory: lessons and limitations, a cancer perspective. British Journal of Cancer, 2009, 101, 2062-2063.	2.9	4
105	Population Structure Induces a Symmetry Breaking Favoring the Emergence of Cooperation. PLoS Computational Biology, 2009, 5, e1000596.	1.5	51
106	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
107	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
108	Evolution of cooperation under n -person snowdrift games. Journal of Theoretical Biology, 2009, 260, 581-588.	0.8	195

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109	The coevolution of loyalty and cooperation. , 2009, , .		0
110	Social Odometry: Imitation Based Odometry in Collective Robotics. International Journal of Advanced Robotic Systems, 2009, 6, 11.	1.3	13
111	Evolutionary Games in Self-Organizing Populations. Understanding Complex Systems, 2009, , 253-267.	0.3	11
112	Evolution of Cooperation in Adaptive Social Networks. World Scientific Lecture Notes in Complex Systems, 2009, , 373-392.	0.1	0
113	Social diversity promotes the emergence of cooperation in public goods games. Nature, 2008, 454, 213-216.	13.7	1,144
114	The evolution of prompt reaction to adverse ties. BMC Evolutionary Biology, 2008, 8, 287.	3.2	44
115	Social Odometry in Populations of Autonomous Robots. Lecture Notes in Computer Science, 2008, , 371-378.	1.0	5
116	How affinity influences tolerance in an idiotypic network. Journal of Theoretical Biology, 2007, 249, 422-436.	0.8	18
117	A Multi-level Selection Model for the Emergence of Social Norms. Lecture Notes in Computer Science, 2007, , 525-534.	1.0	5
118	Evolution of Cooperation in a Population of Selfish Adaptive Agents. Lecture Notes in Computer Science, 2007, , 535-544.	1.0	2
119	Networks Regulating Networks: The Effects of Constraints on Topological Evolution. Lecture Notes in Computer Science, 2007, , 956-965.	1.0	0
120	Tolerance vs Intolerance: How Affinity Defines Topology in an Idiotypic Network. Lecture Notes in Computer Science, 2006, , 109-121.	1.0	9
121	Cooperation Prevails When Individuals Adjust Their Social Ties. PLoS Computational Biology, 2006, 2, e140.	1.5	440
122	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
123	A new route to the evolution of cooperation. Journal of Evolutionary Biology, 2006, 19, 726-733.	0.8	219
124	The evolution of norms. Journal of Theoretical Biology, 2006, 241, 233-240.	0.8	87
125	Growing biological networks: Beyond the gene-duplication model. Journal of Theoretical Biology, 2006, 241, 488-505.	0.8	15
126	Stern-Judging: A Simple, Successful Norm Which Promotes Cooperation under Indirect Reciprocity. PLoS Computational Biology, 2006, 2, e178.	1.5	134

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127	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
128	Network Dependence of the Dilemmas Of Cooperation. AIP Conference Proceedings, 2005, , .	0.3	19
129	Epidemic spreading and cooperation dynamics on homogeneous small-world networks. Physical Review E, 2005, 72, 056128.	0.8	241
130	Neutrino helicity asymmetries in leptogenesis. Physical Review D, 2005, 71, .	1.6	3
131	Scale-Free Networks Provide a Unifying Framework for the Emergence of Cooperation. Physical Review Letters, 2005, 95, 098104.	2.9	1,364
132	Growing Biochemical Networks: Identifying the Intrinsic Properties. Lecture Notes in Computer Science, 2005, , 864-873.	1.0	0
133	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
134	Bootstrapping back the climate with self-organization. , 0, , .		0
135	The Universality of Peer-Influence in Social Networks. , 0, , .		0