

Francisco C Santos

List of Publications by Year in descending order

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Version: 2024-02-01

135
papers

8,342
citations

87888

38
h-index

46799

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. | 5.1 | 6 |
| 2 | Voluntary safety commitments provide an escape from over-regulation in AI development. <i>Technology in Society</i> , 2022, 68, 101843. | 9.4 | 14 |
| 3 | Artificial intelligence development races in heterogeneous settings. <i>Scientific Reports</i> , 2022, 12, 1723. | 3.3 | 9 |
| 4 | Delegation to artificial agents fosters prosocial behaviors in the collective risk dilemma. <i>Scientific Reports</i> , 2022, 12, 8492. | 3.3 | 7 |
| 5 | LINES: muLtlmodal traNsportation rEsilience analySis. <i>Sustainability</i> , 2022, 14, 7891. | 3.2 | 8 |
| 6 | Mediating artificial intelligence developments through negative and positive incentives. <i>PLoS ONE</i> , 2021, 16, e0244592. | 2.5 | 18 |
| 7 | Stable leaders pave the way for cooperation under time-dependent exploration rates. <i>Royal Society Open Science</i> , 2021, 8, 200910. | 2.4 | 4 |
| 8 | Emotion expressions shape human social norms and reputations. <i>IScience</i> , 2021, 24, 102141. | 4.1 | 13 |
| 9 | Modeling behavioral experiments on uncertainty and cooperation with population-based reinforcement learning. <i>Simulation Modelling Practice and Theory</i> , 2021, 109, 102299. | 3.8 | 3 |
| 10 | Risk sensitivity and theory of mind in human coordination. <i>PLoS Computational Biology</i> , 2021, 17, e1009167. | 3.2 | 1 |
| 11 | Eliciting Fairness in N-Player Network Games through Degree-Based Role Assignment. <i>Complexity</i> , 2021, 2021, 1-11. | 1.6 | 5 |
| 12 | Dynamics of informal risk sharing in collective index insurance. <i>Nature Sustainability</i> , 2021, 4, 426-432. | 23.7 | 12 |
| 13 | The complexity of human cooperation under indirect reciprocity. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2021, 376, 20200291. | 4.0 | 20 |
| 14 | Governance of risky public goods under graduated punishment. <i>Journal of Theoretical Biology</i> , 2020, 505, 110423. | 1.7 | 24 |
| 15 | Signalling boosts the evolution of cooperation in repeated group interactions. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20200635. | 3.4 | 6 |
| 16 | Norms for beneficial A.I.: A computational analysis of the societal value alignment problem. <i>AI Communications</i> , 2020, 33, 155-171. | 1.2 | 7 |
| 17 | Timing Uncertainty in Collective Risk Dilemmas Encourages Group Reciprocation and Polarization. <i>IScience</i> , 2020, 23, 101752. | 4.1 | 28 |
| 18 | Navigating the landscape of multiplayer games. <i>Nature Communications</i> , 2020, 11, 5603. | 12.8 | 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. | 2.1 | 9 |
| 20 | A Population Dynamics Approach to Viral Marketing. <i>Studies in Computational Intelligence</i> , 2020, , 399-411. | 0.9 | 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. | 4.9 | 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. | 3.3 | 44 |
| 25 | Capturing Financial Volatility Through Simple Network Measures. <i>Studies in Computational Intelligence</i> , 2019, , 534-546. | 0.9 | 2 |
| 26 | Counterfactual Thinking in Cooperation Dynamics. <i>Studies in Applied Philosophy, Epistemology and Rational Ethics</i> , 2019, , 69-82. | 0.3 | 5 |
| 27 | Exogenous Rewards for Promoting Cooperation in Scale-Free Networks. , 2019, , . | | 9 |
| 28 | A mathematical look at empathy. <i>ELife</i> , 2019, 8, . | 6.0 | 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. | 27.8 | 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. | 2.4 | 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. | 5.9 | 79 |
| 34 | Large-Scale Simulations of Bacterial Populations Over Complex Networks. <i>Journal of Computational Biology</i> , 2018, 25, 850-861. | 1.6 | 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. Physical Review Letters, 2017, 118, 058301. | 7.8 | 26 |
| 38 | Emergence of Social Balance in Signed Networks. Springer Proceedings in Complexity, 2017, , 185-192. | 0.3 | 3 |
| 39 | The Role of Execution Errors in Populations of Ultimatum Bargaining Agents. Lecture Notes in Computer Science, 2017, , 36-50. | 1.3 | 0 |
| 40 | Disease Spreading in Time-Evolving Networked Communities. Theoretical Biology, 2017, , 291-316. | 0.1 | 0 |
| 41 | Using Spark and GraphX to Parallelize Large-Scale Simulations of Bacterial Populations over Host Contact Networks. Lecture Notes in Computer Science, 2017, , 591-600. | 1.3 | 2 |
| 42 | Structural power and the evolution of collective fairness in social networks. PLoS ONE, 2017, 12, e0175687. | 2.5 | 7 |
| 43 | Paradigm shifts and the interplay between state, business and civil sectors. Royal Society Open Science, 2016, 3, 160753. | 2.4 | 11 |
| 44 | An Evolutionary Game Theoretic Approach to Multi-Sector Coordination and Self-Organization. Entropy, 2016, 18, 152. | 2.2 | 18 |
| 45 | Evolution of cooperation under indirect reciprocity and arbitrary exploration rates. Scientific Reports, 2016, 6, 37517. | 3.3 | 30 |
| 46 | Dynamics of Fairness in Groups of Autonomous Learning Agents. Lecture Notes in Computer Science, 2016, , 107-126. | 1.3 | 9 |
| 47 | Linking Individual and Collective Behavior in Adaptive Social Networks. Physical Review Letters, 2016, 116, 128702. | 7.8 | 59 |
| 48 | Evolutionary dynamics of collective index insurance. Journal of Mathematical Biology, 2016, 72, 997-1010. | 1.9 | 6 |
| 49 | Spanning Edge Betweenness in Practice. Studies in Computational Intelligence, 2016, , 3-10. | 0.9 | 6 |
| 50 | Social Norms of Cooperation in Small-Scale Societies. PLoS Computational Biology, 2016, 12, e1004709. | 3.2 | 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. Scientific Reports, 2015, 5, 9312. | 3.3 | 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. | 1.2 | 10 |
| 56 | Co-evolutionary Dynamics of Collective Action with Signaling for a Quorum. <i>PLoS Computational Biology</i> , 2015, 11, e1004101. | 3.2 | 20 |
| 57 | Evolutionary dynamics of group fairness. <i>Journal of Theoretical Biology</i> , 2015, 378, 96-102. | 1.7 | 30 |
| 58 | Cooperation dynamics of polycentric climate governance. <i>Mathematical Models and Methods in Applied Sciences</i> , 2015, 25, 2503-2517. | 3.3 | 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. | 0.3 | 4 |
| 60 | Evolution of All-or-None Strategies in Repeated Public Goods Dilemmas. <i>PLoS Computational Biology</i> , 2014, 10, e1003945. | 3.2 | 40 |
| 61 | Origin of Peer Influence in Social Networks. <i>Physical Review Letters</i> , 2014, 112, 098702. | 7.8 | 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. | 7.1 | 112 |
| 63 | Climate governance as a complex adaptive system. <i>Physics of Life Reviews</i> , 2014, 11, 595-597. | 2.8 | 2 |
| 64 | The ecology of cancer from an evolutionary game theory perspective. <i>Interface Focus</i> , 2014, 4, 20140019. | 3.0 | 68 |
| 65 | Climate change governance, cooperation and self-organization. <i>Physics of Life Reviews</i> , 2014, 11, 573-586. | 2.8 | 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. | 18.8 | 137 |
| 68 | Evolution of Fairness and Conditional Cooperation in Public Goods Dilemmas. <i>Springer Proceedings in Complexity</i> , 2013, , 827-830. | 0.3 | 1 |
| 69 | Individual memory and the emergence of cooperation. <i>Animal Behaviour</i> , 2013, 85, 233-239. | 1.9 | 29 |
| 70 | Urban Dynamics, Fractals and Generalized Entropy. <i>Entropy</i> , 2013, 15, 2679-2697. | 2.2 | 12 |
| 71 | Reward from Punishment Does Not Emerge at All Costs. <i>PLoS Computational Biology</i> , 2013, 9, e1002868. | 3.2 | 21 |
| 72 | Good Agreements Make Good Friends. <i>Scientific Reports</i> , 2013, 3, 2695. | 3.3 | 53 |

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| 73 | Evolution of collective action in adaptive social structures. Scientific Reports, 2013, 3, 1521. | 3.3 | 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. | 2.9 | 28 |
| 77 | How selection pressure changes the nature of social dilemmas in structured populations. New Journal of Physics, 2012, 14, 073035. | 2.9 | 44 |
| 78 | Emergence of Fairness in Repeated Group Interactions. Physical Review Letters, 2012, 108, 158104. | 7.8 | 83 |
| 79 | EVOLUTIONARY DYNAMICS OF CLIMATE CHANGE UNDER COLLECTIVE-RISK DILEMMAS. Mathematical Models and Methods in Applied Sciences, 2012, 22, 1140004. | 3.3 | 45 |
| 80 | Fractal cartography of urban areas. Scientific Reports, 2012, 2, 527. | 3.3 | 43 |
| 81 | Corpus-Based Intention Recognition in Cooperation Dilemmas. Artificial Life, 2012, 18, 365-383. | 1.3 | 38 |
| 82 | Dynamics of N-person snowdrift games in structured populations. Journal of Theoretical Biology, 2012, 315, 81-86. | 1.7 | 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. | 2.5 | 56 |
| 85 | The role of diversity in the evolution of cooperation. Journal of Theoretical Biology, 2012, 299, 88-96. | 1.7 | 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. | 0.3 | 0 |
| 87 | Tracking the Evolution of Cooperation in Complex Networked Populations. Lecture Notes in Computer Science, 2012, , 86-96. | 1.3 | 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. | 0.3 | 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. | 0.3 | 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. | 2.5 | 15 |
| 92 | Escaping the tragedy of the commons via directed investments. Journal of Theoretical Biology, 2011, 287, 37-41. | 1.7 | 33 |
| 93 | Co-evolution of pre-play signaling and cooperation. Journal of Theoretical Biology, 2011, 274, 30-35. | 1.7 | 57 |
| 94 | Selection pressure transforms the nature of social dilemmas in adaptive networks. New Journal of Physics, 2011, 13, 013007. | 2.9 | 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. | 7.1 | 211 |
| 96 | To Grip, or Not to Grip: Evolving Coordination in Autonomous Robots. Lecture Notes in Computer Science, 2011, , 205-212. | 1.3 | 1 |
| 97 | Emergence of Cooperation in Adaptive Social Networks with Behavioral Diversity. Lecture Notes in Computer Science, 2011, , 434-441. | 1.3 | 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. | 3.0 | 6 |
| 100 | Coevolution of Cooperation, Response to Adverse Social Ties and Network Structure. Games, 2010, 1, 317-337. | 0.6 | 15 |
| 101 | Adaptive Contact Networks Change Effective Disease Infectiousness and Dynamics. PLoS Computational Biology, 2010, 6, e1000895. | 3.2 | 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. | 7.8 | 146 |
| 104 | Reply: Evolutionary game theory: lessons and limitations, a cancer perspective. British Journal of Cancer, 2009, 101, 2062-2063. | 6.4 | 4 |
| 105 | Population Structure Induces a Symmetry Breaking Favoring the Emergence of Cooperation. PLoS Computational Biology, 2009, 5, e1000596. | 3.2 | 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. | 2.6 | 285 |
| 107 | Cancer phenotype as the outcome of an evolutionary game between normal and malignant cells. British Journal of Cancer, 2009, 101, 1130-1136. | 6.4 | 101 |
| 108 | Evolution of cooperation under n -person snowdrift games. Journal of Theoretical Biology, 2009, 260, 581-588. | 1.7 | 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. | 2.1 | 13 |
| 111 | Evolutionary Games in Self-Organizing Populations. Understanding Complex Systems, 2009, , 253-267. | 0.6 | 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. | 27.8 | 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. | 1.3 | 5 |
| 116 | How affinity influences tolerance in an idiotypic network. Journal of Theoretical Biology, 2007, 249, 422-436. | 1.7 | 18 |
| 117 | A Multi-level Selection Model for the Emergence of Social Norms. Lecture Notes in Computer Science, 2007, , 525-534. | 1.3 | 5 |
| 118 | Evolution of Cooperation in a Population of Selfish Adaptive Agents. Lecture Notes in Computer Science, 2007, , 535-544. | 1.3 | 2 |
| 119 | Networks Regulating Networks: The Effects of Constraints on Topological Evolution. Lecture Notes in Computer Science, 2007, , 956-965. | 1.3 | 0 |
| 120 | Tolerance vs Intolerance: How Affinity Defines Topology in an Idiotypic Network. Lecture Notes in Computer Science, 2006, , 109-121. | 1.3 | 9 |
| 121 | Cooperation Prevails When Individuals Adjust Their Social Ties. PLoS Computational Biology, 2006, 2, e140. | 3.2 | 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. | 7.1 | 834 |
| 123 | A new route to the evolution of cooperation. Journal of Evolutionary Biology, 2006, 19, 726-733. | 1.7 | 219 |
| 124 | The evolution of norms. Journal of Theoretical Biology, 2006, 241, 233-240. | 1.7 | 87 |
| 125 | Growing biological networks: Beyond the gene-duplication model. Journal of Theoretical Biology, 2006, 241, 488-505. | 1.7 | 15 |
| 126 | Stern-Judging: A Simple, Successful Norm Which Promotes Cooperation under Indirect Reciprocity. PLoS Computational Biology, 2006, 2, e178. | 3.2 | 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. | 2.6 | 311 |
| 128 | Network Dependence of the Dilemmas Of Cooperation. AIP Conference Proceedings, 2005, , . | 0.4 | 19 |
| 129 | Epidemic spreading and cooperation dynamics on homogeneous small-world networks. Physical Review E, 2005, 72, 056128. | 2.1 | 241 |
| 130 | Neutrino helicity asymmetries in leptogenesis. Physical Review D, 2005, 71, . | 4.7 | 3 |
| 131 | Scale-Free Networks Provide a Unifying Framework for the Emergence of Cooperation. Physical Review Letters, 2005, 95, 098104. | 7.8 | 1,364 |
| 132 | Growing Biochemical Networks: Identifying the Intrinsic Properties. Lecture Notes in Computer Science, 2005, , 864-873. | 1.3 | 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 |