

PROF. FRANCISCO RODRIGUES

Universidade de São Paulo

Instituto de Ciências Matemáticas e de Computação,
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Nationality: Brazilian and Portuguese.

Birth: 13 Nov. 1976



RESEARCH INTERESTS

- **Complex Networks:** Structure and Dynamics of Complex Systems and Networks, Statistical Physics: Complex Systems and Networks, Multilayer Systems, Mathematical Biology, Epidemiology, Synchronization and other nonlinear phenomena.
- **Data Science:** Statistics, Machine Learning, Causal inference, Artificial Intelligence.
- **Applications:** Diagnosis of mental disorders, climate, economic and financial analysis, epidemic modeling and forecasting, machine learning, medicine, ecology, social sciences, systems biology, statistical physics, sports analysis, artificial intelligence.

CURRENT ACADEMIC APPOINTMENTS

- **Head of the Department of Applied Mathematics and Statistics,**
University of São Paulo (2023- Present)
- **Full Professor,** Institute of Mathematics and Computer Science,
University of São Paulo (Fev. 2010 - Present)
- **Head of the Complex Systems Group,** University of São Paulo (Fev. 2010 - Present)

PAST PROFESSIONAL EXPERIENCES

- **Associate Professor**
University of Warwick, Mathematics Institute
Centre for Complexity Science.
Coventry, the United Kingdom.
Course: MA5Q3 Topics in Complexity Science
Funding: Leverhulme Trust
Feb. 2018 - Feb.2019
- **Postdoctoral researcher**
University of São Paulo
Physics Institute of São Carlos-São Paulo
August 2007 - January 2010.

EDUCATION

- **PhD in Computational Physics, 2007**
Thesis: Characterization, classification and analysis of complex networks
Physics Institute of São Carlos - São Paulo
University of São Paulo, Brazil

- **M.S. in Computational Physics**, 2004
Dissertation: Object oriented techniques for parallel scientific computation
Physics Institute of São Carlos - São Paulo
University of São Paulo, Brazil
 - **B.S. Graduation in Physics**, 2001
Physics Institute of São Carlos - São Paulo
University of São Paulo, Brazil
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EDITORIAL BOARD

- **Associate Editor, Journal of Complex Networks**
Since December, 2024.
 - **Associate Editor, Chaos, Solitons and Fractals**
Since December, 2020.
 - **Co-Editor, Europhysics Letters (EPL)**
Since April, 2022.
 - **Editor, New Journal of Physics (NJP)**
Since November, 2023.
 - **Editor, Journal of Physics: Complexity**
Since November, 2020.
 - **Editor, Journal of Computational Science**
Since July, 2021.
 - **Associate Editor, Frontiers in Complex Physical Systems**
Since March, 2023.
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PROFESSIONAL SERVICES

- **Reviewer**, Deutsche Forschungsgemeinschaft (DFG).
 - **Reviewer**, Swiss National Science Foundation.
 - **Reviewer**, National Council for Scientific and Technological Development (CNPq, Brazil).
 - **Reviewer**, The São Paulo Research Foundation, Brazil.
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MAIN AWARDS AND HONORS

- Top 2% of the world's most cited researchers, in the fields of Artificial Intelligence/ Image Processing and Physics/Astronomy (Elsevier Data Repository).
 - 10th most cited paper among 27750 papers published in Latin America.
 - Leverhulme Professorship, the UK, (2018)
 - Merit scholar of the Brazilian National Research Council (CNPq) - Level 1C (2023)
 - Merit scholar of the Brazilian National Research Council (CNPq) - Level 1D (2020)
 - Merit scholar of the Brazilian National Research Council (CNPq) (2016)
 - Merit scholar of the Brazilian National Research Council (CNPq) (2013)
 - Merit scholar of the Brazilian National Research Council (CNPq) (2011)
 - Best teacher award, University of São Paulo (2011, 2013, 2015, 2017, 2019, 2021, 2022, 2023, 2024)
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TEN SELECTED PUBLICATIONS

- Francisco A. Rodrigues, Thomas Peron, Colm Connaughton, and Yamir Moreno
A machine learning approach to predicting dynamical observables from network structure, **Proceedings of the Royal Society A: Mathematical and Physical Sciences**, (2025).
- Guilherme Ferraz de Arruda, Lucas G. S. Jeub, Angélica S. Mata, Francisco A. Rodrigues, and Yamir Moreno
From subcritical behavior to a correlation-induced transition in rumor models
Nature Communications, 13, 3049 (2022).
- Cesar H. Comin, Thomas K. DM. Peron, Filipi N. Silva, Diego R. Amancio, Francisco A. Rodrigues, and Luciano da F. Costa
Complex systems: features, similarity and connectivity
Physics Reports, volume 861, pages 1-41 (2020).
- Marco A. R. Mello, Gabriel M. F. Felix, Rafael B. P. Pinheiro, Renata L. Muylaert, Cullen Geiselman, Sharlene Santana, Marco Tschapka, Nastaran Lofti, Francisco A. Rodrigues, and Richard D. Stevens
Insights on the assembly rules of a continent-wide multilayer network
Nature Ecology and Evolution, 1525–1532 (2019).
- Guilherme F. de Arruda, Francisco A. Rodrigues, and Yamir Moreno
Fundamentals of spreading processes in single and multilayer complex networks
Physics Reports, Volume 756, Pages 1-60 (2018).
- Guilherme F. de Arruda, Emanuele Cozzo, Tiago Peixoto, Francisco A. Rodrigues, and Yamir Moreno
Disease localization in multilayer networks
Physical Review X, 7, 011014, (2017).
- Francisco A. Rodrigues, Thomas K. DM. Peron, Peng Ji, and Jürgen Kurths
The Kuramoto model in complex networks
Physics Reports, V. 610, Pages 1–98, (2016).
- Peng Ji, Thomas K. DM. Peron, Peter J. Menck, Francisco A. Rodrigues, and Jürgen Kurths
Cluster explosive synchronization in complex networks
Physical Review Letters, 110, 218701 (2013).
- Luciano da F. Costa, Osvaldo N. Oliveira Jr., Gonzalo Travieso, Francisco A. Rodrigues, Paulino R. Villas Boas, Lucas Antikueira, Matheus P. Viana, and Luis E. C. da Rocha
Analyzing and Modeling Real-World Phenomena with Complex Networks: A Survey of Applications
Advances in Physics, 60:3, pg 329-412, (2011).
- Luciano da F. Costa, Francisco A. Rodrigues, Gonzalo Travieso, and P. R. Villas Boas
Characterization of complex networks: A survey of measurements
Advances in Physics, 56, 167 - 242, 1, (2007).

MAIN SHORT COURSES

- "Introduction to Complex Networks: structure and dynamics", PhD summer school: Complex networks: dynamics and control, University of Warwick, (July, 2019)

- "Introduction to Machine Learning", Aschaffenburg University of Applied Sciences, Germany, (October, 2018)
- "Dynamics on networks", Aschaffenburg University of Applied Sciences, Germany, (June, 2018)
- "Machine learning: a short introduction", University of Zaragoza, Spain, (April, 2018)

MAIN TALKS (INVITED SPEAKER AND INVITED SEMINARS)

- "Complex systems: tackling humanity's biggest problems", Interdisciplinary Advances in Network: A Collaborative Workshop in Aschaffenburg University of Applied Sciences, Germany, September 2024.
- "Prediction and Inference in Complex Systems", ICTP-SAIFR Satellite Meeting: Network Dynamics and Synchronization, APS March Meeting 2023.
- PHYSCON2021, The 10th International Scientific Conference on Physics and Control, Fudan University, Shanghai, China, (October, 2021).
- Artificial Intelligence lecture series, University of Applied Sciences Aschaffenburg, Germany, (April, 2021).
- GMT Morning Workshop on Nonlinear Dynamics and Statistics, (December, 2020).
- 7th International Conference on Information Management and Big Data, SIMBig 2020, Invited Speaker, Plenary Talk, Peru, (October, 2020).
- Virtual Seminars on Complexity, The Center for Complexity and Biosystems of the University of Milan, (September, 2020).
- Dynamics Days Digital 2020, Amsterdam, The Netherlands (August, 2020).
- The University of Western Australia (UWA), Complex Systems Seminar (July, 2020).
- Workshop on Modelling of Infectious Diseases Dynamics, ICTP-SAIFR, São Paulo, Brazil, (March, 2020)
- Conference on Perspectives in Nonlinear Dynamics, ICTP-SAIFR, São Paulo, Brazil, (July, 2019)
- University of Warwick (January, 2019)
- University of Coventry (November, 2018)
- University of Oxford (November, 2018)
- Mathematics Department, Queen Mary University of London, London (November, 2018)
- Centre for Business Network Analysis, University of Greenwich (November, 2018)
- ISI Foundation, Turin, Italy (October, 2018)
- Complexity Science Hub Vienna (October, 2018)
- Institut d'Études Avancées (IEA), Neuville-sur-Oise, France (October, 2018)
- University of Oxford, the UK, (October, 2018)
- University of Porto, Portugal, (September, 2018)
- Newcastle University, The United Kingdom, (August, 2018)
- Aschaffenburg University of Applied Sciences, Germany, (June, 2018)
- Potsdam Institute for Climate Research, Germany, (June, 2018)
- University of Bath, The United Kingdom, (May, 2018)
- University of Zaragoza, Spain, (April, 2018)
- University of Warwick, The United Kingdom, (March, 2018)
- University of Campinas, Campinas, (June, 2015)
- Humboldt Colloquium, São Paulo, (February, 2015)

- ICTP South American Institute for Fundamental Research, São Paulo, (October, 2014)
- Vrije Universiteit Amsterdam, the Netherlands, (2009)
- Radboud University Nijmegen, the Netherlands, (2009)

CONFERENCE ORGANIZATION AND PROGRAM COMMITTEES

- SIMBIG 2020, 7th International Conference on Information Management and Big Data.
- 6th Internacional Conference on Nonlinear Science and Complexity, São José dos Campos - SP - Brazil, 2016.
- 7th International Conference on Emerging Technologies in Computing 2024 (iCETiC '24), University of Essex, Southend Campus, UK
- 10th Workshop on Probabilistic and Statistical Methods - WPSM 2024, São Paulo, Brazil.
- CCS2023, Conference on Complex Systems, Salvador, Brazil.
- Complex Networks and their Applications 2024, The University of Edinburgh, United Kingdom.
- II Workshop and School on Dynamics, Transportation, and Control in Complex Networks 2013, Ribeirão Preto, Brazil.
- Complex Networks and their Applications 2023, Menton Riviera, France.
- 16th International Conference on Digital Signal Processing (DSP 2009), Santorini, Greece.

FUNDING (MAIN PROJECTS)

- CeMEAI - Center for Mathematical Sciences Applied to Industry (PI), The São Paulo Research Foundation, 2013-2026. US\$ 6,7M.
- IARA - Artificial Intelligence in the Remaking of Urban Environments (PI), The São Paulo Research Foundation, 2023-2028. US\$ 3,2M.
- Scholarships approved: 54 (US\$ 1,9M), The São Paulo Research Foundation.
- Prediction and inference in complex systems, The São Paulo Research Foundation, 2020-2022. US\$ 20K.
- Information spreading in complex networks, The São Paulo Research Foundation, 2017-2019. US\$ 14K.
- Modelling of dynamical processes in complex networks, The São Paulo Research Foundation, 2014-2016. US\$ 22K.
- Characterization, analysis, simulation and classification of complex networks, The São Paulo Research Foundation, 2011-2013. US\$ 18K.
- Visiting Researcher, US\$ 100K, 2018, Leverhulme Trust.
- Dynamical processes on multilayer and dynamic networks, US\$ 15K, The São Paulo Research Foundation/University of Warwick.
- Cortical Networks, 2013-2015, The São Paulo Research Foundation/Bavarian University Center for Latin America.

ADVISING AND MENTORING

- **Supported Postdocs**
 1. Ruben Interian Kovaliova, 2023, (now Assistant Professor at Unicamp).
 2. Thomas K. Dal'Maso Peron, 2023| (now Assistant Professor at the University of São Paulo).

3. Pedro Luiz Ramos, 2024, (now Assistant Professor at the Pontificia Universidad Católica de Chile).
4. Luiz Gustavo de Andrade Alves, 2022, (now Research Fellow at the Northwestern University, US).
5. Débora Correa, 2021, (now Assistante Professor at the University of Western Australia).
6. Nastaran Lotfi, 2024, (now Research Fellow at the University of Texas, US).

• **PhD students:**

1. Aruane Mello Pineda, 2023, (now Data Scientist at Bradesco).
2. Caroline Lourenço Alves, 2023, (now Researcher at the Aschaffenburg University of Applied Sciences).
3. Tiago Martinelli, 2023, (now Data Scientist at Itaú).
4. Kirstin Roster, 2022, (now Researcher at the University of Harvard).
5. Michel Alexandre da Silva, 2022, (now Research Analyst at the Central Bank of Brazil).
6. Paulo César Ventura, 2022, (now Research Fellow at Indiana University, US)
7. Guilherme Ferraz de Arruda, 2017, (Researcher at ISI Foundation, Turin, Italy. Now, at CENTAI Institute, Turin).
8. Didier A. Vega-Oliveros, 2017, (Researcher at Indiana University. Now, Researcher at Recod.ai).
9. Thomas K. Dal'Maso Peron, 2017, (Now, Assistant Professor at USP).
10. Mayra M. Z. Rodriguez, 2018, (now Senior Data Scientist at Mercado Livre).
11. André Luiz Barbieri, (now postdoc at the University of São Paulo)

• **Master's degree students:**

1. Ricardo Tetti, 2024, (now PhD student at Kadir Has University, Turkiye.).
2. Juliano Negri, 2024, (now Back End Developer at the Bees Brasil).
3. Andrés Guzmán, 2023, (now PhD student at the Northeastern University London).
4. Guilherme Michel de Carvalho, 2022, (now Data Scientist at Grupo SBF).
5. Ana Clara Ferreira, 2021, (now Data Scientist at iFood).
6. Bruno Daniel Sanches, 2019, (now Software Engineer, Microsoft, Canada.)
7. Rafael Santos, 2019, (now Software Engineer at YES Techonology).
8. Caroline Lourenço Alves, 2019, (now PhD student at University of São Paulo/ Aschaffenburg University of Applied Sciences, Germany).
9. Livia Akemi Hotta, 2017, (now Software Engineer at Outfit7, Slovenia).
10. Bianca M. Shimizu Oe, 2017, (now Software Engineer at Google, US).
11. Thomas K. D. M. Peron, 2013, (now Assistant Professor at USP)
12. Guilherme Ferraz de Arruda, 2013, (now at ISI Foundation, Turin, Italy).
13. André Luiz Barbieri, 2011, (now postdoc at the University of São Paulo)
14. Luis Fernando Dorelli de Abreu, 2016, (now Senior Software Engineer at Google at Google, London, United Kingdom).
15. Leonardo Miguel, 2021, (now Data Scientist at Spotify, Sweden).
16. Gabriela Passos, 2020, (now Data Scientist at Quod).

• **Visiting students (PhD students)**

1. Nastaran Lotfi (University of Zanjan, Iran) (2017-2018)

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2. Chris Gong (University of Potsdam, Germany) (Sep-Dec, 2018)
 3. Tim Kittel (Potsdam Institute for Climate Impact Research, Germany) (Nov-Mar, 2015)
 4. Robert Bestel (University of Aschaffenburg, Germany) (Sep, 2014)
 5. Manuel Ciba (University of Aschaffenburg, Germany) (Sep, 2014)

- **Undergraduate students:** more than 50 students advised.

TEACHING

- **"Statistics for Computer Science"**, Master and PhD Program in Computer Science and Applied Mathematics, Years: 2023, 2024.
 - **"Complex Networks"**, Undergraduate Course, Years: 2017, 2019, 2022, 2023, 2024.
 - **"Dynamical Processes in Complex Networks"**, Master and PhD Program in Computer Science and Applied Mathematics, Years: 2013, 2014, 2015, 2016, 2017, 2019, 2022, 2023, 2024.
 - **"Statistics"**, Undergraduate Course, Years: 2011, 2012, 2013, 2014, 2015, 2017.
 - **"Stochastic Processes"**, Undergraduate Course, Years: 2008, 2011, 2012, 2014, 2015, 2016, 2019, 2020.
 - **"Numerical Calculus"**, Undergraduate Course, Years: 2010, 2013,
 - **"Probability Theory"**, Undergraduate Course, Years: 2010, 2011, 2012, 2021, 2022, 2023.
 - **"Data Mining"**, Undergraduate Course, Years: 2015, 2017, 2019, 2021.
 - **"Scientific Method"**, Undergraduate Course, Years: 2017.
 - **"Topics in Complexity Science"**, Master and PhD Program in Mathematics, University of Warwick, Year: 2018.
 - **"Introduction to Data Science"**, Undergraduate Course, Years: 2020, 2021, 2022, 2023, 2024.
 - **"Introduction to Data Science"**, Master in Data Science, Years: 2020, 2021, 2022, 2023, 2024.
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BOOKS

- Emanuele Cozzo, Guilherme Ferraz de Arruda, Francisco A. Rodrigues, Yamir Moreno
An Introduction to Multiplex Networks: Basic Formalism and Structural Properties
Book. Springer Briefs in Complexity, (2018).
 - Probabilidade e Estatística, Uiclap, 2025.
 - Complex network: structure, dynamics and applications, Cambridge University Press, accepted.
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PUBLICATIONS

- My scientific production amounts to 155+ peer-reviewed publications with a total of 10795+ citations and h-index=40 (Google Scholar, as of January 2025); and 6644+ citations and h=32 (Scopus, as of January 2025). Relevant contributions include journals like [Physics Reports](#), [Advances in Physics](#), [Nature Ecology](#), [Nature Communications](#), [Phys. Rev. Lett.](#), [Phys. Rev. X](#), [Proceedings of Royal Society A](#), [American Journal of Epidemiology](#), etc.

1. Francisco A. Rodrigues, Thomas Peron, Colm Connaughton, and Yamir Moreno
A machine learning approach to predicting dynamical observables from network structure, **Proceedings of the Royal Society A: Mathematical and Physical Sciences**, accepted (2025).
2. Francisco A Rodrigues, *Physics and machine learning: mutual benefits*
Europhysics Letters (EPL), accepted (2025).
3. Michel Alexandre and Francisco A. Rodrigue, *Complex financial networks*
Brazilian Journal of Physics, Volume 55, article number 49, (2025).
4. Kirstin Roster, Tiago Martinelli, Colm Connaughton, Mauricio Santillana, and Francisco A. Rodrigues, *Impact of the COVID-19 pandemic on dengue in Brazil: Interrupted time series analysis of changes in surveillance and transmission*
PLOS Neglected Tropical Diseases (2024).
5. Tiago Martinelli, Alberto Aleta, Francisco A Rodrigues, and Yamir Moreno
Informational approach to uncover the age group interactions in epidemic spreading from macro analysis, **Physical Review E**, 110, 064321 (2024).
6. Silas Alves-Costa, Bruno Feres de Souza, Francisco Aparecido Rodrigues, Alexandre Archanjo Ferraro, Gustavo G. Nascimento, Fabio R. M. Leite, Lorena Lúcia Costa Ladeira, Rosângela Fernandes Lucena Batista, Erika Bárbara Abreu Fonseca Thomaz, Claudia Maria Coelho Alves, and Cecilia Claudia Costa Ribeiro
High free sugars, insulin resistance, and low socioeconomic indicators: the hubs in the complex network of non-communicable diseases in adolescents
Diabetology and Metabolic Syndrome 16, 235 (2024).
7. Pedro Luiz Ramos, Daniel C. F. Guzman, Alex L. Mota, Francisco A. Rodrigues, and Francisco Louzada
Sampling with censored data: a practical guide
Journal of Statistical Computation and Simulation, p. 1-35, (2024).
8. Eduardo Alves Baratela, Felipe Jordão Xavier, Thomas Peron, Paulino Ribeiro Villas-Boas, and Francisco A. Rodrigues
Predicting soccer matches with complex networks and machine learning
Journal of Complex Networks, Volume 12, Issue 6, (2024).
9. Luiza Lober, Kirstin O Roster, and Francisco A Rodrigues
Forecasting infectious diseases in Brazilian cities: integrating socio-economic and geographic data from related cities through a machine learning approach
Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena, Volume 187, 115417 (2024).
10. Diogo H. Silva, Francisco A. Rodrigues, and Silvio C. Ferreira
Accuracy of discrete-and continuous-time mean-field theories for epidemic processes on complex networks
Physical Review E, 110, 014302 (2024).
11. Caroline L. Alves, Tiago Martinelli, Loriz Francisco Sallum, Francisco A. Rodrigues, Thaise G. L. de O. Toutain, Joel Augusto Moura Porto, Christiane Thielemann, Patrícia Maria de Carvalho Aguiar, and Michael Moeckel
Multiclass Classification of Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, and Typically Developed Individuals Using fMRI Functional Connectivity Analysis, **PLOS One**, (2024).

12. Michel Alexandre, Felipe Jordão Xavier, Thiago Christiano Silva, and Francisco A. Rodrigues
Nestedness and systemic risk in financial networks
Latin American Journal of Central Banking, 100136 (2024).
13. Caroline L. Alves, Manuel Ciba, Thaise Toutain, Joel Augusto Moura Porto, Eduardo Pondé de Sena, Christiane Thielemann, and Francisco A. Rodrigues
On the advances in machine learning and complex network measures to an EEG dataset from DMT experiments
Journal of Physics: Complexity, 5, 015002 (2024).
14. Nastaran Lotfi, Henrique Requejo, Francisco A. Rodrigues, and Marco A. R. Mello
A new centrality index designed for multilayer networks
Methods in Ecology and Evolution, 15 (1), 204-213 (2023) - Featured in the cover.
15. Eduardo Ramos, Osafu A. Egbon, Pedro L. Ramos, Francisco A. Rodrigues, and Francisco Louzada
Objective Bayesian analysis for the differential entropy of the Gamma distribution
Brazilian Journal of Probability and Statistics, 38 (1), 53-73 (2024).
16. Francisco Aparecido Rodrigues
Machine learning in physics: a short guide
Europhysics Letters (EPL), Volume 144, Number 2 (2023).
17. André Calixto Gonçalves, Rodolfo Valentim, Francisco Aparecido Rodrigues, and Ivan Filipe Fernandes
Indigenous schools in Brazil as a tool for acculturation
Nature, 622, 7982 (2023).
18. Aruane M. Pineda, Paul Kent, Colm Connaughton, and Francisco A. Rodrigues
*Machine learning-based **prediction of Q-voter model in complex networks***
Journal of Statistical Mechanics: Theory and Experiment (JSTAT), (12), 123402, (2023).
19. Michel Alexandre, Thiago Silva, Krzysztof Michalak, and Francisco A. Rodrigues
Efficiency-stability Trade-off in Financial Systems: a multi-objective optimization approach
Physica A: Statistical Mechanics and its Applications, 629, 129213 (2023).
20. Ruben Interian and Francisco A. Rodrigues
Group polarization, influence, and domination in online interaction networks: A case study of the 2022 Brazilian elections
Journal of Physics: Complexity, 4, 035008 (2023).
21. Aruane M. Pineda, Caroline L. Alves, Michael Möckel, Joel Augusto Moura Porto, and Francisco A. Rodrigues
Analysis of quantile graphs in EGC data from elderly and young individuals using machine learning and deep learning
Journal of Complex Networks, Volume 11, Issue 5, (2023).
22. Aruane M. Pineda, Sandro M. Reia, Colm Connaughton, José F. Fontanari, and Francisco A. Rodrigues
Cultural heterogeneity constrains diffusion of innovations
Europhysics Letters (EPL), 143, 42003 (2023).
23. Caroline L. Alves, Thaise G. L. de O. Toutain, Joel Augusto Moura Porto, Patricia de Carvalho Aguiar, Aruane M. Pineda, Eduardo Pondé de Sena, Christiane Thielemann,

and Francisco A Rodrigues

Analysis of functional connectivity using machine learning and deep learning in different data modalities from individuals with schizophrenia

Journal of Neural Engineering, 20, 056025 (2023).

24. Pedro Ramos, Francisco A. Rodrigues, Dipak K. Dey, and Francisco Louzada

Power-law distributions in objective priors

Statistica Sinica (2023).

25. Caroline L. Alves, Thaise G. L. de O. Toutain, Patricia de Carvalho Aguiar, Aruane M. Pineda, Kirstin Roster, Christiane Thielemann, Joel Augusto Moura Porto, and Francisco A. Rodrigues

Diagnosis of autism spectrum disorder based on functional brain networks and machine learning

Scientific Reports volume 13, number: 8072 (2023) .

26. Michel Alexandre, Felipe Xavier, and Francisco A. Rodrigues

The determinants of the individual nestedness contribution in financial systems

Europhysics Letters (EPL) (2023).

27. Ginestra Bianconi, Alex Arenas, Jacob Biamonte, Lincoln D. Carr, Byungnam Kahng, Janos Kertesz, Jürgen Kurths, Linyuan Lü, Cristina Masoller, Adilson E. Motter, Matjaz Perc, Filippo Radicchi, Ramakrishna Ramaswamy, Francisco A. Rodrigues, Marta Sales-Pardo, Maxi San Miguel, Stefan Thurner, and Taha Yasseri

Complex systems in the spotlight: next steps after the 2021 Nobel Prize in Physics

Journal of Physics: Complexity, 4, 010201 (2023).

28. Michel Alexandre, Thiago Silva, Krzysztof Michalak, and Francisco A. Rodrigues

Does the default pecking order impact systemic risk? Evidence from Brazilian data

European Journal of Operational Research, Volume 309, Issue 3, 16 (2023).

29. Paulo C. Ventura, Eric K. Tokuda, Luciano da F. Costa, and Francisco A. Rodrigues

A Markov chain for metapopulations of small sizes with attraction landscape

Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena, Volume 167, 113003, (2023).

30. Francisco A. Rodrigues

The structure of biological complexity: Comment on "Networks behind the morphology and structural design of living systems" by Gosak et al.

Physics of Life Reviews, vol. 44, Pages 73-76, (2023).

31. Guilherme Ferraz de Arruda, Lucas G. S. Jeub, Angélica S. Mata, Francisco A. Rodrigues, and Yamir Moreno

From subcritical behavior to a correlation-induced transition in rumor models

Nature Communications, 13, 3049 (2022).

32. Caroline L. Alves, Rubens Gisbert Cury, Kirstin Roster, Francisco A. Rodrigues, Christiane Thielemann, and Manuel Ciba

Application of machine learning and complex network measures to an EEG dataset from ayahuasca experiments

PLOS One, 17(12): e0277257, (2022).

33. Thomas Bouillet, Manuel Ciba, Caroline Laurengo Alves, Francisco A. Rodrigues, Christiane Thielemann, Morvane Colin, Luc Buée, and Sophie Halliez

Revisiting the involvement of tau in complex neural network remodeling: analysis of

the extracellular neuronal activity in organotypic brain slice co-cultures

Journal of Neural Engineering, 19(6), (2022).

34. José Carlos M. Silva, Diogo H. Silva, Francisco A. Rodrigues, and Silvio C. Ferreira
Comparison of theoretical approaches for epidemic processes with waning immunity in complex networks
Physical Review E, 106, 034317 (2022).
35. Kirstin Roster, Colm Connaughton, and Francisco A. Rodrigues
Forecasting new diseases in low-data settings using transfer learning
Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena, Volume 161, 112306, (2022).
36. Luiz G. A. Alves, Giuseppe Mangioni, Francisco A. Rodrigues, Pietro Panzarasa, and Yamir Moreno
The rise and fall of countries in the global value chains
Scientific Reports, 12, 9086(2022).
37. Caroline L. Alves, Aruane M. Pineda, Kirstin Roster, Christiane Thieleman, and Francisco A. Rodrigues
EEG functional connectivity and deep learning for automatic diagnosis of brain disorders: Alzheimer's disease and schizophrenia
Journal of Physics: Complexity, 3, 025001 (2022).
38. C. T. Martinez-Martinez, J. A. Mendez-Bermudez, Francisco A. Rodrigues, and Ernesto Estrada
Nonuniform random graphs on the plane: A scaling study
Physical Review E, 105, 034304, (2022).
39. Paulo Cesar Ventura, Alberto Aleta, Francisco A. Rodrigues, and Yamir Moreno
Modeling the effects of social distancing on the large-scale spreading of diseases
Epidemics, volume 38, 100544, (2022).
40. Nastaran Lotfi and Francisco A Rodrigues
On the effect of memory on the Prisoner's Dilemma game in correlated networks
Physica A: Statistical Mechanics and its Applications, Volume 607, 128162, (2022).
41. Guillermo L. Florez-Montero¹, Renata L. Muylaert, Marcelo R. Nogueira, Cullen Geiselman, Sharlene E. Santana, Richard D. Stevens, Marco Tschapka, Francisco A. Rodrigues, and Marco A. R. Mello
NeoBat Interactions: a data set of bat-plant interactions in the Neotropics
Ecology, e3640, (2022).
42. Paulo C. Ventura, Alberto Aleta, Francisco A. Rodrigues, and Yamir Moreno
Epidemic spreading in populations of mobile agents with adaptive behavioral response
Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena, 156, 111849, (2022).
43. Kirstin Roster, Colm Connaughton, and Francisco A. Rodrigues
Machine Learning Based Forecast of Dengue Fever in Brazilian Cities using Epidemiological and Meteorological Variables
American Journal of Epidemiology, Volume 191, Issue 10, (2022).

44. Michel Alexandre, Kauê de Moraes, and Francisco A. Rodrigues
Risk-dependent centrality in the Brazilian stock market
Journal of Complex Networks, volume 10, Issue 1 (2022).
45. Aruane M. Pineda, Caroline L. Alves, Colm Connaughton, and Francisco A Rodrigues
Machine learning for the prediction of voter model opinions through complex network structures
Proc. of the Interdisciplinary Conference on Mechanics, Computers and Electrics
(ICMECE 2022) 6-7 October 2022, Barcelona, Spain.
46. Michel Alexandre, Thiago Christiano Silva, Colm Connaughton, and Francisco A. Rodrigues
The drivers of systemic risk in financial networks: a data-driven machine learning analysis
Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena, Volume 153, Part 1, (2021).
47. Tim Kittel, Catrin Ciemer, Nastaran Lotfi, Thomas Peron, Francisco A. Rodrigues, Jürgen Kurths, and Reik V. Donner
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