Luis Gustavo Nardin

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Research Interests

My research interests center around the use and development of Multiagent Systems Modeling and Simulation methods and tools in combination with Statistical Analysis for understanding the impacts of social and human behaviors on the emergent properties of complex adaptive systems.

The main topics of interest are:

- Normative Multiagent Systems
- Agent-Based Modeling
- Simulation Data Analytics
- Computational Social Sciences

Professional Experience

Academic

2021—Now	**Associate Professor**	Mines Saint-Étienne, France
2019—2021	**Lecturer**	National College of Ireland, Ireland
2017—2019	**Faculty**	Brandenburg University of Technology, Germany
2015—2017	**Postdoctoral**	University of Idaho, USA
2012—2015	**Research Fellow**	Institute of Cognitive Science and Technologies, Italy
2010—2011	**Research Fellow**	University of São Paulo, Brazil

Industry

2006—2010	**System Architect**	Computer Associates, Brazil
2003—2006	**System Engineer**	Murah Technologies, Brazil
1997—2003	**Support Engineer**	Sonda do Brasil, Brazil
1995—1995	**Programmer**	Brain Informática, Brazil

Education

2015 **PhD, Computer Engineering**, University of São Paulo, Brazil
An Adaptive Sanctioning Enforcement Model for Normative Multiagent Systems

2009 **MsC, Computer Engineering**, University of São Paulo, Brazil
An Architecture to Support Agent Reputation Models Interoperability

2005 **Specialization, Computer Engineering**, University of São Paulo, Brazil
Use of Multiagent Systems in Context-Aware Systems

2003 **Computer Engineering**, University São Francisco, Brazil

Publications

Journal

- Suchar, V.-A. & **Nardin, L. G.** (2022). Simulation-based assessment of the effectiveness of tests for stationarity. *Mathematics and Statistics*, 10(3), 670–683. doi: 10.13189/ms.2022.100324.

- Devezer, B., **Nardin, L. G.**, Baumgaertner, B., & Buzbas, E. O. (2019). Scientific discovery in a model-centric framework: Reproducibility, innovation, and epistemic diversity. *PLOS ONE*, 14(5), e0216125. doi: 10.1371/journal.pone.0216125.

- Székely, Á., **Nardin, L. G.**, & Andrighetto, G. (2018). Countering protection rackets using legal and social approaches: An agent-based test. *Complexity*, 2018, 1–16. doi: 10.1155/2018/3568085.

- Realpe-Gómez, J., Vilone, D., Andrighetto, G., **Nardin, L. G.**, & Montoya, J. A. (2018). Learning dynamics and norm psychology supports human cooperation in a large-scale prisoner's dilemma on networks. *Games*, 90(4), 90. doi: 10.3390/g9040090.

- Realpe-Gómez, J., Andrighetto, G., **Nardin, L. G.**, & Montoya, J. A. (2018). Balancing selfishness and norm conformity can explain human behavior in large-scale prisoner's dilemma games and can poise human groups near criticality. *Physical Review E*, 97, 042321. doi: 10.1103/PhysRevE.97.042321.

- **Nardin, L. G.**, Székely, Á., & Andrighetto, G. (2017). GLODERS-S: A simulator for agent-based models of criminal organisations. *Trends in Organized Crimes*. 20(1–2), 85–99. doi: 10.1007/s12117-016-9287-y.

- **Nardin, L. G.**, Miller, C. R., Ridenhour, B. J., Krone, S. M., Joyce, P., & Baumgaertner, B. O. (2016). Planning horizon affects prophylactic decision-making and epidemic dynamics. *PeerJ*, 4, e2678. doi: 10.7717/peerj.2678.

- **Nardin, L. G.**, Andrighetto, G., Conte, R., Székely, Á., Anzola, D., Elsenbroich, C., Lotzmann, U., Neumann, M., Punzo, V., & Troitzsch, K. G. (2016). Simulating protection rackets: A case study of the Sicilian mafia. *Journal of Autonomous Agents and Multi-Agent Systems*. 30(6), 1117–1147. doi: 10.1007%2fs10458-016-9330-z.

- **Nardin, L. G.**, Balke, T., Ajmeri, N., Kalia, A. A., Sichman, J. S., & Singh, M. P. (2016). Classifying sanctions and designing a conceptual sanctioning process model for socio-technical systems. *The Knowledge Engineering Review*. 31(2), 142–166. doi: 10.1017/S0269888916000023.

- **Nardin, L. G.**, Brandão, A. A. F., Kira, E., & Sichman, J. S. (2014). Effects of reputation communication expressiveness in virtual societies. *Computational and Mathematical Organization Theory*, 20(2), 113–132. doi: 10.1177/0894439313511396.

- Villatoro, D., Andrighetto, G., Brandts, J., **Nardin, L. G.**, Sabater-Mir, J., & Conte, R. (2014). The norm-signaling effects of group punishment: Combining agent-based simulation and laboratory experiments. *Social Science Computer Review*, 32(3), 334–353. doi: 10.1007/s10588-012-9151-9.

- Pereira, A. H., **Nardin, L. G.**, & Sichman, J. S. (2012). LTI Agent Rescue: A partial global approach for task allocation in the RoboCup Rescue. *Revista de Informática Teórica e Aplicada*, 19(2), 71–92. doi: 10.22456/2175-2745.21506.

- **Nardin, L. G.**, Brandão, A. A. F., & Sichman, J. S. (2011). Experiments on semantic interoperability of agent reputation models using the SOARI architecture. *Engineering Applications of Artificial Intelligence*, 24(8), 1461–1471. doi: 10.1016/j.engappai.2011.05.004.

Edited Books

- **Nardin, L. G.** & Mehryar, S. (Eds.) (2024). *Multi-Agent-Based Simulation XXIV: 24th International Workshop, MABS 2023, London, UK, May 29 – June 2, 2023, Revised Selected Papers*. Cham: Springer, Lecture Notes in Computer Science v.14558. doi: 10.1007/978-3-031-61034-9

- Deutschmann, E., Lorenz, J., **Nardin, L. G.**, Natalini, D., & Wilhelm, A. F. X. (Eds.) (2020). *Computational Conflict Research*. Cham: Springer, Computational Social Sciences Book Series. doi: 10.1007/978-3-030-29333-8

- **Nardin, L. G.** & Antunes, L. (Eds.) (2017). *Multi-Agent-Based Simulation XVII: International Workshop, MABS 2016, Singapore, Singapore, May 10, 2016, Revised Selected Papers*. Cham: Springer, Lecture Notes in Computer Science v.10399. doi: 10.1007/978-3-319-67477-3

Book Chapters

- Hafiene, N., **Nardin, L. G.**, Zimmermann, A., & Boissier, O. (2023). Governing online forum interactions with multi-agent system: A Reddit use case with the JaCaMo platform. In P. Mathieu, F. Dignum, P. Novais, F. de la Prieta (Eds.), *Advances in Practical Applications of Agents, Multi-Agent Systems, and Cognitive Mimetics. The PAAMS Collection* (pp. 113–124). Cham: Springer, PAAMS 2023. LNCS v.13955. doi: 10.1007/978-3-031-37616-0_10

- Duffy, F., Klosek, K. C., **Nardin, L. G.**, & Wagner, G. (2020). Rebel Group Protection Rackets: Simulating the effects of economic support on civil war violence. In E. Deutschmann, J. Lorenz, L.G. Nardin, D. Natalini, & A.F.X. Wilhelm (Eds.), *Computational Conflict Research* (pp. 225–251). Cham: Springer, Computational Social Sciences Book Series. doi: 10.1007/978-3-030-29333-8_11

- Deutschmann, E., Lorenz, J., & **Nardin, L. G.** (2020). Advancing conflict research through computational approaches. In E. Deutschmann, J. Lorenz, L.G. Nardin, D. Natalini, & A.F.X. Wilhelm (Eds.), *Computational Conflict Research* (pp. 1–19). Cham: Springer, Computational Social Sciences Book Series. doi: 10.1007/978-3-030-29333-8_1

- de Lima, I. C. A., **Nardin, L. G.**, & Sichman, J. S. (2019). Gavel: A sanctioning enforcement framework. In D. Weyns, V. Mascardi, & A. Ricci (Eds.), *Engineering Multi-Agent Systems* (pp. 225–241). Cham: Springer. doi: 10.1007/978-3-030-25693-7_12

- Visser, A., **Nardin, L. G.**, & Castro, S. (2019). Integrating the latest artificial intelligence algorithms into the RoboCup Rescue Simulation framework. In D. Holz, K. Genter, M. Saad, & O. von Stryk (Eds.), *RoboCup 2018: Robot World Cup XXII* (pp. 476–487). Cham: Springer, LNCS v.11374. doi: 10.1007/978-3-030-27544-0_39

- **Nardin, L. G.**, Andrighetto, G., Székely, Á., Punzo, V., & Conte, R. (2016). An agent-based model of extortion racketeering. In C. Elsenbroich, D. Anzola, & N. Gilbert (Eds.), *Social Dimensions of Organised Crime* (pp. 105–116). Cham: Springer. doi: 10.1007/978-3-319-45169-5_7

- Székely, Á., **Nardin, L. G.**, & Andrighetto, G. (2016). Social norms and extortion rackets. In C. Elsenbroich, D. Anzola, & N. Gilbert (Eds.), *Social Dimensions of Organised Crime* (pp. 49–64). Cham: Springer. doi: 10.1007/978-3-319-45169-5_4

- Troitzsch, K. G., **Nardin, L. G.**, Andrighetto, G., Székely, Á., Punzo, V., Conte, R., & Elsenbroich, C. (2016). Calibration and validation. In C. Elsenbroich, D. Anzola, & N. Gilbert (Eds.), *Social Dimensions of Organised Crime* (pp. 217–239). Cham: Springer. doi: 10.1007/978-3-319-45169-5_12

- **Nardin, L. G.**, Andrighetto, G., Székely, Á., & Conte, R. (2016). Modelling extortion racket systems: Preliminary results. In F. Cecconi (Ed.), *New Frontiers in the Study of Social Phenomena: Cognition, Complexity, Adaptation* (pp. 65–80). Cham: Springer. doi: 10.1007/978-3-319-23938-5_4

- Nardin, L. G., Rosset, L. M., & Sichman, J. S. (2014). Scale and topology effects on agent-based simulation: A trust-based coalition formation case study. In D. F. Adamatti, G. P. Dimuro, & H. Coelho (Eds.), *Interdisciplinary Applications of Agent-Based Social Simulation and Modeling* (pp. 36–51). Hershey, PA: IGI Global. doi: 10.4018/978-1-4666-5954-4.ch003

- **Nardin, L. G.**, Brandão, A. A. F., Sichman, J. S., & Vercouter, L. (2008). SOARI: A service oriented architecture to support agent reputation models interoperability. In R. Falcone, S. K. Barber, J. Sabater-Mir, & M. P. Singh (Org.), *Trust in Agent Societies* (pp. 292–307). Berlin, Heidelberg: Springer, LNCS v.5396. doi: 10.1007/978-3-540-92803-4_15

Conference Proceedings

Full Papers

- Land, K., **Nardin, L. G.**, & Vogel-Heuser, B. (2023). Increasing robustness of agents' decision-making in production automation using sanctioning. In *Proceedings of the 2023 IEEE 21st International Conference on Industrial Informatics (INDIN)* (pp. 1–6). Pistacaway, NJ: IEEE. doi: 10.1109/INDIN51400.2023.10217852

- Wagh, V. K., Pathak, P., Stynes, P. & **Nardin, L. G.** (2020). An evacuation route model for disaster affected areas. In *Proceedings of the 28th Irish Conference on Artificial Intelligence and Cognitive Science* (pp. 61–72). Dublin: CEUR.org, CEUR Workshop Proceedings v.2771

- Wagner, G. & **Nardin, L. G.** (2018). Adding agent concepts to object event modeling and simulation. In *Proceedings of the 2018 Winter Simulation Conference* (pp. 893–904). Pistacaway, NJ: IEEE. doi: 10.1109/WSC.2018.8632381

- Rosset, L. M., **Nardin, L. G.**, & Sichman, J. S. (2014). Using reputation to improve partner selection in a Smart Grid environment. In *Proceedings of the 4th Brazilian Workshop on Social Simulation*. São Paulo

- **Nardin, L. G.**, Andrighetto, G., Conte, R., & Paolucci, M. (2014). From anarchy to monopoly: How competition and protection shaped mafia's behavior. In *Advances in Computational Social Science and Social Simulation*, Social Simulation Conference 2014 (pp. 444–454). Barcelona: Autònoma University of Barcelona

- Medina, A. C., **Nardin, L. G.**, Pereira, N. N., Botter, R. C., & Sichman, J. S. (2013). A distributed simulation model of the maritime logistics in an iron ore supply chain management. In *Proceedings of the 3rd International Conference on Simulation and Modeling Methodologies, Technologies and Applications* (pp. 453–460). Reykjavik: SciTePress. doi: 10.5220/0004488504530460

- Barroso, A. D., Santana, F. de C., Lassance, V., da Silva, A. B. M., **Nardin, L. G.**, Brandão, A. A. F., & Sichman, J. S. (2013). RoboCup Rescue 2013 LTI Agent Rescue Team Description. In *Proceedings of the RoboCup 2013*. Eindhoven: RoboCup Federation

- da Silva, A. M. B., **Nardin, L. G.**, & Sichman, J. S. (2012). Um método baseado em particionamento para exploração de ambientes de desastre. In *Anais do 9o Encontro Nacional de Inteligência Artificial*. Curitiba: Sociedade Brasileira de Computação

- **Nardin, L. G.** & Sichman, J. S. (2012). Trust-based coalition formation: A multiagent-based simulation. In *Proceedings of the 4th World Congress on Social Simulation*. Taipei

- **Nardin, L. G.** & Sichman, J. S. (2011). A study of the influence of trust in coalition formation. In *Proceedings of the 2011 Computational Social Science Society of America Annual Conference*. Santa Fe, NM

- **Nardin, L. G.**, Brandão, A. A. F., Kira, E., & Sichman, J. S. (2011). Effects of communication expressiveness in agent reputation models interoperability: A multivariate analysis approach. In *Proceedings of the 2nd International Conference on Reputation*. Montpellier

- Brito, I., Hino, C., Gonçalves, P., Andrade, L., Moreira, C., Costa, G., **Nardin, L. G.**, Yoshizaki, H. Y., & Magalhães, D. J. (2011). Reducing CO2 emissions due to a shift from road to cabotage transport of cargo in Brazil. In *Proceedings of the 29th International Conference of The System Dynamics Society*. Washington, DC

- Pereira, A. H., **Nardin, L. G.**, Brandão, A. A. F., & Sichman, J. S. (2011). LTI Agent Rescue Team: A BDI-based approach for Robocup Rescue. In *Proceedings of the RoboCup 2011*. Istanbul: RoboCup Federation

- Pereira, A. H., **Nardin, L. G.**, & Sichman, J. S. (2011). Coordination of agents in the RoboCup Rescue: A partial global approach. In *2011 Workshop and School of Agent Systems, their Environment and Applications* (pp. 45–50). Pistacaway, NJ: IEEE. doi: 10.1109/WESAAC.2011.10

- **Nardin, L. G.** & Sichman, J. S. (2010). Simulating the impact of trust in coalition formation: A preliminary analysis. In G. P. Dimuro, J. S. Sichman, D. F. Adamatti, P. Tedesco, J. Balsa, & L. Antunes (Org.), *2010 Second Brazilian Workshop on Social Simulation* (pp. 33–40). Pistacaway, NJ: IEEE. doi: 10.1109/BWSS.2010.12

- **Nardin, L. G.** & Sichman, J. S. (2010). SOARI: A service-oriented architecture to enable interoperability of agent reputation models. In *Anais do 7o. Concurso de Teses e Dissertações em Inteligência Artificial* (pp. 299–310). São Bernardo do Campo

- **Nardin, L. G.**, Muller, G., Brandão, A. A. F., Vercouter, L., & Sichman, J. S. (2009). Effects of expressiveness and heterogeneity of reputation models in the ART testbed: Some preliminary experiments using the SOARI architecture. In *Proceedings of the 12th International Workshop on Trust in Agent Societies*. Budapest

- **Nardin, L. G.**, Brandão, A. A. F., Sichman, J. S., & Vercouter, L. (2008). A service-oriented architecture to support agent reputation models interoperability. In *Proceedings of the 3rd Workshop on Ontologies and Their Applications*. Salvador: CEUR.org, CEUR Workshop Proceedings v.427

Extended Abstracts

- Rosset, L. M., **Nardin, L. G.**, & Sichman, J. S. (2013). Use of High Performance computing in agent-based social simulation: A case study on trust-based coalition formation. In *Anais do VII Workshop-Escola de Sistemas de Agentes, seus Ambientes e apliCações* (pp. 161–163). São Paulo

- Barroso, A. D., Santana, F. de C., Lassance, V., **Nardin, L. G.**, Brandão, A. A. F., & Sichman, J. S.

(2013). Using agent coordination techniques to support rescue operations in urban disaster environments. In *Anais do VII Workshop-Escola de Sistemas de Agentes, seus Ambientes e apliCações* (pp. 189–191). São Paulo

- **Nardin, L. G.**, Brandão, A. A. F., Sichman, J. S., & Vercouter, L. (2008). An ontology mapping service to support agent reputation models interoperability. In *Proceedings of the 11th International Workshop on Trust in Agent Societies* (pp. 140–144). Estoril

Research Projects

Coordinator

2023–2027   **Normative Artificial Intelligence for regulating MANufacturing (NAIMAN)**, ANR/FAPESP ANR-22-CE23-0018
NAIMAN aims to develop technologies that enable agents to operate in heterogeneous and dynamic industrial settings and reason about normative aspects to enhance flexibility, resilience, trustworthiness, and sustainability of manufacturing systems in the context of the Industry of the Future. NAIMAN will create normative regulation mechanisms, design a regulation architecture and implement a MAS platform, whose applicability will be demonstrated and assessed on various Industry of the Future platforms.

2013–2014   **On the Influence of Norms and Sanctions on Socio-technical Systems Governance - An Agent-based Simulation Approach**, UGPN Research
Human society is increasing its dependence on information technology in order to deal with more complex environments, such as socio-technical systems. These systems are complex adaptive systems in which social entities and technologies co-evolve. They are constantly becoming bigger and more complex, what is making their governance difficult. One natural form to implement governance in these systems is through the use of norms and sanctions. While the concept of a ?norm? is already well defined, the sanctioning concept still lacks a more precise definition in the socio-technical domain. Moreover, it is known that both concepts influence socio-technical systems? behavior; however, their influence is difficult to measure in a real environment. Therefore, this collaboration is proposing to further define the notion of sanctioning and analyze how norms and sanctions influence systems behavior through an agent-based simulation approach. Furthermore, we propose to carry out such analyses in a next generation energy infrastructure domain aiming to identify what combination of norms and sanctions promote reduction in consumers? energy consumption.

2008–2009   **Service Oriented Architecture for Reputation Interoperability (SOARI)**, FAPESP 2008/06356-3
Em Sistemas Multiagentes abertos e descentralizados, uma forma de se obter a ordem social é utilizando mecanismos de controle social nos agentes da sociedade, dentre os quais se encontra a noção de reputação. Para agilizar o processo de convergência do valor da reputação de outros agentes da sociedade, os agentes interagem através da troca de informações sobre reputação. Entretanto, devido à heterogeneidade dos modelos de reputação existentes, a interoperabilidade entre agentes sobre reputação torna-se uma tarefa complexa. O objetivo deste projeto de pesquisa é desenvolver uma arquitetura detalhada de agente, que permita que agentes com modelos de reputação heterogêneos interajam sobre reputação utilizando uma ontologia comum de domínio como interlíngua. A arquitetura a ser proposta utilizará a abordagem de interoperabilidade semântica híbrida com o propósito de proteger do conhecimento comum o modelo de reputação interno de cada agente, assim evitando possíveis manipulações de informação para benefício próprio.

Participation

2023–2027   **Adaptive Co-Construction of Ethics for LifElong tRrustworthy AI (ACCELER-AI)**, ANR-22-CE23-0028
ACCELER-AI aims to enable the adaptive co-construction of Ethics in and for a long-lived intelligent system addressing diversity and trustworthiness.

2023–2023   **RAMP-UP II**, German-French Academy for the Industry of the Future
RAMP-UP II addresses the limitations of state-of-the-art approaches for agile, resilient and sustainable manufacturing and service industries, in particular in uncertain situations such as crisis context. It aims to develop a generic methodology supported by decision-support tools to plan and manage ramp-up and ramp-down projects considering resilience, agility, and sustainability criteria. RAMP-UP II focuses on manufacturing and healthcare services.

2019–2024   **HyperAgents**, ANR/SNF ANR-19-CE23-0030
The HyperAgents project aims to enable the deployment of world-wide hybrid communities of people and autonomous agents on the Web. For this purpose, HyperAgents defines a new class of multi-agent systems (MAS) that use hypermedia as a general mechanism for uniform interaction.

2011–2024   **RoboCup Rescue Simulation League**, RoboCup Federation
The RoboCup Rescue Simulation League is an education and research project that promotes research and development in the socially significant domain of natural disaster. The RoboCup Rescue Simulator aims to realistically represent natural disaster scenarios where response plans can be assessed.

2017–2019   **Web-based Simulation for Science and Education**, Brandenburg University of Technology
The Simulation for Education (Sim4edu) project supports web-based simulation with open source technologies for science and education. It provides both simulation technologies and a library of educational simulations. Its goal is to support various styles of modeling and simulation, including discrete event simulation, NetLogo-style grid space models (and Cellular Automata models), and agent-based simulation.

2015–2017   **Theory, Practice, and Social Aspects of Reproducible Science**, University of Idaho
Reproducibility of research findings is a pillar of science. Lately, however, many scientific disciplines have failed to reproduce their major research findings. The scientific community has recognized nonreproducibility as a symptom of systematic problems in current scientific practice. This recognition has triggered a shift toward revised research practices that will presumably fix the problem. However, a theory of nonreproducibility to inform such efforts is lacking. Our project aims to advance a theory of nonreproducibility and to promote the practice of reproducible research which will have immediate practical impact through revised research practices at academia, governmental organizations, and industry starting with the UI community. We plan to achieve these aims via novel research, education, and outreach. Research-wise, we will use statistical theory and agent-based modeling to understand the drivers of nonreproducibility and study how the dynamics of scientific community affect this problem. Expected outcomes are two manuscripts and a national grant proposal. Education-wise, we aim to develop a graduate seminar to train graduate students in sound research practices. We will also develop an interactive web app and a website as educational tools. Outreach-wise, we will conduct a workshop to facilitate collaboration on meta-research and disseminate information to state and federal agencies.

2015–2017   **Social Determinants of Infectious Disease Dynamics**, NIGMS/NIH P20GM104420
How pathogens spread through a population can be complicated by a number of factors. One of them is pathogen interaction during co-infection. Here infection by one pathogen can change host susceptibility to a second, or being co-infected can change a host's infectivity compared to a singly infected host. A second factor is that infection can alter behavior both for biological reasons and, in humans especially, for social reasons. These behavioral responses, in turn, change the patterns of interactions that drive transmission dynamics. A third closely related factor is that patterns of spatial aggregation around environmental features can create an intricate network of interactions that strongly affect how infections spread. This project focus on how the transmission dynamics at the population are affected by the interactions of co-infecting pathogens, the environment, and social factors that influence behavior. The main approach to this research makes use of agent-based modeling, a computational framework comprised of individuals, an environment, and rules for how individuals interact with the environment and each other.

2012–2015 **Global Dynamics of Extortion Racket Systems**, FP7-ICT 315874
The GLODERS research project is directed towards development of an ICT model for understanding a specific aspect of the dynamics of the global financial system:Extortion Racket Systems (ERSs). ERSs, of which the Mafia is but one example, are spreading globally from a small number of seed locations, causing massive disruption to economies. Yet there is no good understanding of their dynamics and thus how they may be countered. ERSs are not only powerful criminal organizations, operating at several hierarchical levels, but also prosperous economic enterprises and highly dynamic systems, likely to reinvest in new markets. If stakeholders - legislators and law enforcers - are to be successful in attacking ERSs, they need the much better understanding of the evolution of ERSs that computational models and ICT tools can give them.

2010–2011 **Vale's Network of Ports and Ships Modeling and Simulation**, Vale do Rio Doce
Modelar e simular a rede integrada de portos e a frota de navios próprios e afretados (dedicados ou não). Deve levar em consideração a coleta e a entrega dos produtos até os portos de seus clientes espalhados pelo mundo, especialmente para o mercado asiático, bem como o perfil de frota para a parcela de vendas FOB, cujo dimensionamento e administração não estão sob a gestão da Vale.

Teaching Experience

2021—2024	Lecturer	Multi-Agent Coordination
2021—2024	Lecturer	Multi-Agent Programming
2021—2024	Lecturer	Cloud and Edge Infrastructures
2022—2024	Lecturer	Software Engineering
2022—2024	Lecturer	Technological Foundations of Software Development
2022	Lecturer	Everything from the Command Line
2020—2021	Lecturer	Data Intensive Architectures
2020—2021	Lecturer	Data Mining and Machine Learning I
2020	Lecturer	Computing Systems
2019—2020	Lecturer	Advanced Programming
2019—2020	Lecturer	Research in Computing
2019—2020	Lecturer	Web Application Development
2019	Tutor	Modeling and Simulation of Discrete Systems
2018	Lecturer	Data Analytics and Machine Learning with R
2017—2019	Tutor	Web Applications
2017—2018	Lecturer	Multiagent Systems
2017—2018	Tutor	Web Documents
2016	Instructor	R Workshop
2012	Tutor	Artificial Intelligence Laboratory
2011	Tutor	Fundamentals of Computer Engineering Laboratory

Supervision

PhD

2023—2026	Yan, E.	Self-adaptive regulation mechanisms for a trustworthy and sustainable industry of the future
2023—2026	Deschamps, T.	Multi-objective and multi-agent reinforcement learning for the co-construction of ethical behaviors
2022—2025	Nassim, H.	Multi-agent simulation for urban logistics

Master Projects

2022	Rathwaththage, R.	Synthetic population generation
2021	Swain, D. K.	Combining VGG16 with random forest and capsule network for detecting multiple myeloma

2021	Vaz, K. W.	Study of association rule mining and XGBoost combination for retail coupon success prediction
2021	Goswami, R.	Forecasting air quality index using RNN with Long Short-Term Memory and linear regression
2021	Badola, S.	Image based recommendation for e-commerce search using deep learning
2021	Thakkar, S. J.	Using hybrid methodology for extracting handwritten names from images by reckoning optical character recognition
2021	Nasa, C.	Application of blockchain technology for post-trade settlement mechanism of financial securities
2020	Wagh, V. K.	A hybrid model of sectorization and evacuation path detection for disaster affected areas
2019	de Lima, I. C. A.	Sanction-based regulation mechanism for normative multiagent systems
2018	Wang, Y.	Teaching economics with Lengnick's Baseline Economy model
2017	Xu, K.	Educational simulations based on the Lemonand Stand Game
2017	Lelo, J. C.	Mafia: Simulating the influence on the economy

Undergraduate Projects

2024	El Aafi, S.	SynPActy : Synthetic population and activity generator
2022	Ait Balli, H.	Edge Computing architecture to minimize latency for Smart Factory in Industry 4.0
2020	Rego, B. F., Amorin, G. R., & Miazaqui, G. Y.	Gerenciamento de desastres: Uma abordagem baseada em sistemas multiagentes
2014	Rosset, L. M.	Uso de sanções na formação e manutenção de parcerias entre agentes autônomos
2013	Barroso, A., Lassance, V., & Santana, F. C.	Uso de técnicas de coordenação entre agentes para operações de resgate em ambientes de desastre urbano
2013	Rosset, L. M.	Simulação de parcerias entre agentes autônomos
2012	da Silva, A. B.	Coordenação de agentes para RoboCup Rescue Agent Simulation
2011	Perreira, A. H.	Time de agentes para RoboCup Rescue Agent Simulation

Events

2024	Organizer	2024 Summer School on AI Technologies for Trust, Interoperability, Autonomy and Resilience in Industry 4.0
2024	Co-Chair	Demonstration and Competition Track @AAMAS 2024
2024	Organizer	2024 International Workshop on Coordination, Organizations, Institutions, Norms and Ethics for Governance of Multi-Agent Systems @AAMAS 2024
2024	Organizer	The Next Generation of Humanitarians @HNPW 2024
2023	Organizer	2023 Summer School on AI Technologies for Trust, Interoperability, Autonomy and Resilience in Industry 4.0
2023	Organizer	24th International Workshop on Multi-Agent-Based Simulation @AAMAS 2023
2023	Organizer	RoboCup Rescue Simulation League @RoboCup 2023
2023	Tutorial Presenter	Multi-Agent Oriented Programming @EASSS 2023
2023	Tutorial Presenter	Multi-Agent Oriented Programming @PFIA 2023
2023	Presenter	Natural disaster preparedness supported by simulation @HNPW 2023
2022	Organizer	Workshop on AI and Simulation for Natural Disaster Management @RoboCup Symposium 2022
2022	Organizer	RoboCup Rescue Simulation League @RoboCup 2022
2021	Organizer	Workshop on AI and Simulation for Natural Disaster Management

2021	Keynote Speaker	Bridging the Gap Between Discrete-Event and Agent-Based Simulation @II MSSiS
2019	Tutorial Presenter	Introduction to JavaScript-based Simulation @SummerSim 2019
2018	Expert	BIGSSS Summer Schools in Computational Social Science
2018	Organizer	RoboCup Rescue Simulation League @RoboCup 2018
2017	Organizer	RoboCup Rescue Simulation League @RoboCup 2017
2016	Organizer	17th International Workshop on Multi-Agent-Based Simulation @AAMAS 2016
2016	Organizer	RoboCup Rescue Simulation League @RoboCup 2016
2015	Organizer	RoboCup Rescue Simulation League @RoboCup 2015
2014	Local Organizer	RoboCup Rescue Simulation League @RoboCup 2014
2013	Track Chair	Analytical, Cognitive and Dynamic Models into IS@itAIS 2013
2012	Organizer	RoboCup Rescue Simulation League @LARC 2012
2012	Tutorial Presenter	RoboCup Rescue Simulation League @WESAAC 2012

Committee Member

2017—2024	Executive Committee Member	RoboCup Rescue Simulation League
2012—2017	Technical Committee Member	RoboCup Rescue Simulation League

Editorial Board

2017—Now	Co-Editor	Journal of Simulation Engineering (JSimE)

Honors and Awards

2018	Infrastructure Award	RoboCup 2018
2014	Best Student Paper Award	SSC 2014
2013	Gold Medal	CBR 2013
2012	Gold Medal	LARC 2012
2011	Gold Medal	CBR 2011
2011	Among the 3 best papers	WESAAC 2011
2010	Silver Medal	LARC 2010

Languages

Portuguese	Native
English	Fluent
French	Advanced (Listen, Read), Intermediary (Speak), Basic (Write)
Italian	Intermediary (Listen, Read) and Basic (Speak, Write)
German	Basic (A1)