

Ciência-IUL

Public Profile

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Pedro Mariano

Coordinator

ISTAR-IUL - Information Sciences, Technologies and Architecture Research Center (ISTA) [Information Systems]

Integrated Researcher

ISTAR-IUL - Information Sciences, Technologies and Architecture Research Center (ISTA) [Information Systems]



Contacts	
E-mail	Pedro.Mariano@iscte-iul.pt
Office	231

Curriculum

Has a bachelor degree in Informatics Engineering in 1997 by the Faculty of Sciences and Technology of the New University of Lisbon. He obtained a master degree in Applied Artificial Intelligence in 200 by the Faculty of Sciences and Technology of the New University of Lisbon under the supervision of Luís Correia. He obtained a doctoral degree in Informatics in 2006 by the Faculty of Sciences of the University of Lisbon under the supervision of Luís Correia.

He has taught in the Electronics, Telecommunications and Informatics Department of the University of Aveiro and in the Informatics Department of the Faculty of Sciences of the University of Lisbon. Among the courses he taught are Operating Systems, Artificial Intelligence, Programming, Automata Theory, Data Bases, and Distributed Systems.

He has participated in the European projects ASSISIbf and InfoHabitants. He was a co-principal investigator in projects funded by the research unit BioISI. He is the co-principal investigator in the INTERPHENO project funded by the Portuguese science foundation. He is a researcher in the ExpoLIS projected funded by FEDER. He is a collaborator of the research units BioISI and Lasige.

He was a program committee member in several conferences from the Artificial Life field. He has participated in the organisation of Portuguese conferences as well as Portuguese programming competitions.

His research interests are focused in applying techniques from machine learning to the generic game playing field and to the classification of real world data.

Machine Learning
Artificial Inteligence Applied to Games
Evolution of Cooperation
Decision Support Systems
Social Simulation
Optimization Algorithms

Academic Qualifications

University/Institution	Туре	Degree	Period
Faculdade de Ciências da Universidade de Lisboa	PhD	Informática	2006
Universidade de Lisboa Faculdade de Ciências	PhD	Engenharia Informática	2006
Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia	M.Sc.	Mestrado em Inteligência Artificial Aplicada	2000
Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia	Licenciate	Licenciatura em Engenharia Informática	1997

Teaching Activities Teaching Year Sem. **Course Name** Degree(s) Coord • Institutional Degree in Escola de Tecnologias e Arquitetura; 2024/2025 2° No Programming and Generation of Virtual Worlds Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Health; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Software and Applications Development; 2023/2024 1° No Database and Information Management

Supervisions

• Ph.D. Thesis

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
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• M.Sc. Dissertations

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Tiago Manuel Barreto Relvas	A serious game for raising air pollution awareness in children	English	ISCTE-IUL	2021
2	Tiago Manuel Barreto Relvas	A serious game for raising air pollution awareness in children	English	ISCTE-IUL	2021
3	Duarte Vaz Correia Vital	Interactive Air Pollution Mapping Tool for Experts	English	ISCTE-IUL	2020
4	Duarte Vaz Correia Vital	Interactive Air Pollution Mapping Tool for Experts	English	ISCTE-IUL	2020
5	Ana Rita Ruivo dos Santos	Automatic Scenarios Generator for General Game Playing	Portuguese	ISCTE-IUL	2018
6	Ana Rita Ruivo dos Santos	Automatic Scenarios Generator for General Game Playing	Portuguese	ISCTE-IUL	2018

Total Citations	
Web of Science®	103
Scopus	146

Publications

• Scientific Journals

- Scientific journal paper

1	Relvas, T., Mariano, P., Almeida, S. M. & Santana, P. (N/A). A serious game for raising air pollution perception in children. Journal of Computers in Education. N/A
2	Mariano, P., Almeida, S. M. & Santana, P. (N/A). On the automated learning of air pollution prediction models from data collected by mobile sensor networks. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects. N/A, 1-17 - Times Cited Web of Science®: 7 - Times Cited Scopus: 7 - Times Cited Google Scholar: 8

3	Correia, C., Martins, V., Matroca, B., Santana, P., Mariano, P., Almeida, AAlmeida, S.M. (2023). A low-cost sensor system installed in buses to monitor air quality in cities. International Journal of Environmental Research and Public Health. 20 (5) - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 3
4	Vital, D., Mariano, P., Almeida, S. M. & Santana, P. (2022). Knowledge-based generation of plausible air quality maps in the absence of sensor data. International Journal of Creative Interfaces and Computer Graphics. 13 (1), 1-17
5	Santana, P., Almeida, A., Mariano, P., Correia, C., Martins, V. & Almeida, S. M. (2021). Air quality mapping and visualisation: An affordable solution based on a vehicle-mounted sensor network. Journal of Cleaner Production. 315 - Times Cited Web of Science®: 12 - Times Cited Scopus: 17 - Times Cited Google Scholar: 24
6	Nuno M. Rodrigues, João E. Batista, Mariano, P., Vanessa Fonseca, Bernardo Duarte & Sara Silva (2021). Artificial Intelligence Meets Marine Ecotoxicology: Applying Deep Learning to Bio-Optical Data from Marine Diatoms Exposed to Legacy and Emerging Contaminants. Biology. 10 (9), 932 - Times Cited Web of Science®: 10 - Times Cited Scopus: 11
7	Ana Barradas, Pedro M.P. Correia, Sara Silva, Mariano, P., Pires, M. C., Matos, A. RJorge Marques da Silva (2021). Comparing Machine Learning Methods for Classifying Plant Drought Stress from Leaf Reflectance Spectra in Arabidopsis thaliana. Applied Sciences. 11 (14), 6392-6392 - Times Cited Web of Science®: 14 - Times Cited Scopus: 14
8	Teles, B., Mariano, P. & Santana, P. (2020). Game-like 3D visualisation of air quality data. Multimodal Technologies and Interaction. 4 (3) - Times Cited Web of Science®: 4 - Times Cited Scopus: 9 - Times Cited Google Scholar: 13
9	Silva, J. M., Figueiredo, A, Cunha, J., Eiras-Dias, J. E., Silva, S., Vanneschi, LMariano, P. (2020). Using rapid chlorophyll fluorescence transients to classify vitis genotypes. Plants. 9 (2) - Times Cited Web of Science®: 7 - Times Cited Scopus: 9 - Times Cited Google Scholar: 12
10	Mariano, P. (2015). Public and Private Partner Selection in Battle of Sexes. International Journal of Adaptive, Resilient and Autonomic Systems.
11	Mariano, P. (2015). The Give and Take Game: Analysis of a Resource Sharing Game. International Journal of Applied Mathematics and Computer Science. - Times Cited Web of Science®: 2 - Times Cited Scopus: 2 - Times Cited Google Scholar: 2
12	Mariano, P. & Correia, L. (2014). Partner selection using reputation information in n-player cooperative games. Journal of Telecommunications and Information Technology. 2014 (4), 53-60 - Times Cited Google Scholar: 1

- Book author

1	Mariano, P. & Correia, L. (2015). Partner selection delays extinction in cooperative and coordination dilemmas. - Times Cited Google Scholar: 4
2	Gomes, J., Mariano, P. & Christensen, A. L. (2014). Novelty search in competitive coevolution. - Times Cited Web of Science®: 5 - Times Cited Google Scholar: 13
3	Mariano, P. (2009). Progress in Artificial Intelligence. Springer-Verlag.
4	Mariano, P., Correia, L., Correia, L., Correia, L & Luís Correia (2003). A resource sharing model to study social behaviours. - Times Cited Web of Science®: 1 - Times Cited Google Scholar: 3

- Book chapter

1	Wilde, Philippe, Chli, Maria, Correia, L., Ribeiro, R., Mariano, P., Abramov, VGoossenaerts, J. (2003). Adapting Populations of Agents. In Eduardo Alonso and Daniel Kudenko and Dimitar Kazakov (Ed.), Adaptive Agents
	and Multi-Agent Systems.
	- Times Cited Google Scholar: 11

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	Mariano, P., Almeida, S. M., Almeida, A., Correia, C., Martins, V., Moura, JSantana, P. (2022). An information system for air quality monitoring using mobile sensor networks. In Gini, G., Nijmeijer, H., Burgard, W., and Filev, D. (Ed.), Proceedings of the 19th International Conference on Informatics in Control, Automation and Robotics. (pp. 238-246). Lisboa: SCITEPRESS - Science and Technology Publications. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
2	Vital, D., Mariano, P., Almeida, S. M. & Santana, P. (2021). A graphical tool for eliciting knowledge of air pollution sources. In 2021 International Conference on Graphics and Interaction (ICGI). Porto: IEEE. - Times Cited Scopus: 2 - Times Cited Google Scholar: 2
3	Santana, P., Almeida, A., Mariano, P., Correia, C., Martins, V. & Almeida, S. M. (2020). An affordable vehicle- mounted sensing solution for mobile air quality monitoring. In Solic, P., Nizetic, S., Rodrigues, J. J. P. C., Lopez- de-Ipina, GdeA. D., Perkovic, T., Catarinucci, L., and Patrono, L. (Ed.), 2020 5th International Conference on Smart and Sustainable Technologies (SpliTech). Split: IEEE. - Times Cited Scopus: 6 - Times Cited Google Scholar: 8
4	Mariano, P., Almeida, S. M. & Santana, P. (2020). Pollution prediction model using data collected by a mobile sensor network. In Solic, P., Nizetic, S., Rodrigues, J. J. P. C., Lopez-de-Ipina Gonzalez-de-Artaza, D., Perkovic, T., Catarinucci, L., and Patrono, L. (Ed.), 2020 5th International Conference on Smart and Sustainable Technologies (SpliTech). Split: IEEE. - Times Cited Scopus: 3 - Times Cited Google Scholar: 3

5	Gomes, J., Mariano, P. & Christensen, A. L. (2015). Cooperative coevolution of morphologically heterogeneous robots. In ECAL 2015: the 13th European Conference on Artificial Life. (pp. 312-319). York: MIT Press. - Times Cited Web of Science®: 5 - Times Cited Google Scholar: 8
6	Gomes, J., Mariano, P. & Christensen, A. L. (2015). Cooperative coevolution of partially heterogeneous multiagent systems. In Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2015). (pp. 297-305). - Times Cited Google Scholar: 26
7	Gomes, J., Mariano, P. & Christensen, A. L. (2015). Hyb-CCEA: Cooperative Coevolution of Hybrid Teams. In Sara Silva (Ed.), Proceedings of the Companion Publication of the 2015 Annual Conference on Genetic and Evolutionary Computation. (pp. 1251-1252). Madrid Spain: ACM. - Times Cited Google Scholar: 1
8	Gomes, J., Mariano, P. & Christensen, A. L. (2015). Cooperative coevolution of partially heterogeneous multiagent systems. In Elkind, E., Bordini, R. H., Weiss, G., and Yolum P. (Ed.), Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2015). (pp. 297-305). Istanbul: International Foundation for Autonomous Agents and Multiagent Systems. - Times Cited Google Scholar: 26
9	Mariano, P., Christensen, A. L. & Gomes, J. (2014). Avoiding convergence in cooperative coevolution with novelty search. In Ana Bazzan,Michael Huhns (Ed.), Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2014). (pp. 1149-1156).: International Foundation for Autonomous Agents and Multiagent Systems. - Times Cited Web of Science®: 20 - Times Cited Scopus: 24 - Times Cited Google Scholar: 37
10	Mariano, P., Christensen, A. L. & Gomes, J. (2014). Novelty search in competitive coevolution. In Thomas Bartz- Beielstein, Jürgen Branke, Bogdan Filipi, Jim Smith (Ed.), Parallel Problem Solving from Nature PPSN XIII, Conference Proceedings. Ljubljana: Springer.
11	Mariano, P., Nunes, D. & Correia, L. (2014). A comparison of public and private partner selection models in the battle of sexes game. In Mohamed Essaaidi and Mohamed Nemiche (Ed.), Conference Proceedings: 2014 Second World Conference on Complex Systems (WCCS). (pp. 518-523). Agadir: IEEE. - Times Cited Google Scholar: 2
12	Mariano, P. & Correia, L. (2013). Population Dynamics of Centipede Game using an Energy Based Evolutionary Algorithm. In Advances in Artificial Life, ECAL 2013. - Times Cited Scopus: 4 - Times Cited Google Scholar: 5
13	Mariano, P. & Correia, L. (2012). A Private Reputation Mechanism for n-Player Games. In Juan Pavón and Néstor D. Duque and Rubén Fuentes (Ed.), Advances in Artificial Intelligence - IBERAMIA 2012. (pp. 432-441). - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
14	Mariano, P., Correia, L. & Grilo, C. (2011). Selection of cooperative partners in n-player games. In George Kampis and Eörs Szathmáry (Ed.), Advances in Artificial Life. - Times Cited Google Scholar: 1

15	Mariano, P. & Correia, L. (2011). Evolution of Partner Selection. In Tom Lenaerts and Mario Giacobini and Hugues Bersini and Paul Bourgine and Marco Dorigo and René Doursat (Ed.), Advances in Artificial Life, ECAL 2011: Proceedings of the Eleventh European Conference on the Synthesis and Simulation of Living Systems. (pp. 487-494).: MIT Press. - Times Cited Google Scholar: 5
16	Mariano, P. & Correia, L. (2011). Partner classification in partner selection. In Luis Antunes and H. Sofia Pinto and Rui Prada and Paulo Trigo (Ed.), Proceedings of the 15th Portuguese Conference on Artificial Intelligence. (pp. 182-193).
17	Mariano, P. & Correia, L. (2010). Partner selection: Finding the right combination of players. In Artificial Life XII: Proceedings of the Twelfth International Conference on the Synthesis and Simulation of Living Systems. (pp. 852-859). - Times Cited Scopus: 1
18	Ribeiro, J., Mariano, P. & Seabra Lopes, L. (2009). DarkBlade: A program that plays diplomacy. In Progress in Artificial Intelligence, 14th Portuguese Conference on Artificial Intelligence, EPIA 2009. - Times Cited Web of Science®: 1 - Times Cited Scopus: 5 - Times Cited Google Scholar: 11
19	Mariano, P., Correia, L & Grilo, C (2009). How to Build the Network of Contacts. In New Trends in Artificial Intelligence. (pp. 65-76).: Luís Seabra Lopes and Nuno Lau and Pedro Mariano and Luís M. Rocha.
20	Chli, Maria, Wilde, Philippe, Goossenaerts, J., Abramov, V., Szirbik, N., Correia, LRibeiro, R. (2003). Stability of multi-agent systems. In Proceedings of the 2003 IEEE International Conference on Systems, Man and Cybernetics. (pp. 551-556). - Times Cited Scopus: 17 - Times Cited Google Scholar: 36
21	Mariano, P., Marques, M, Correia, L., Ribeiro, R., Abramov, V., Goosenaerts, JWilde, Philippe (2003). A model for agent mobility and interaction. In Contributions to Adaptable Agent Societies. (pp. 142-145). - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
22	Mariano, P. & Correia, L. (2003). A Resource Sharing Model to Study Social Behaviours. In Lecture Notes in Computer Science. (pp. 84-88). - Times Cited Scopus: 1
23	Mariano, P. & Correia, L. (2002). The Effect of Agreements in a Game with Multiple Strategies for Cooperation. In Russell Standish and Mark A. Bedau and Hussein A. Abbass (Ed.), Artificial Life VIII: Proceedings of the Eighth International Conference on Artificial Life. (pp. 375-378). - Times Cited Google Scholar: 7
24	Vladimir Abramov, Nick Szirbik, Jan Goossenaerts, Tshilidzi Marwala, Philippe De Wilde, Luís CorreiaRita Ribeiro (2001). Ontological basis for open distributed multi-agent system. In Proceedings of the AISB'01 Symposium on Adaptive Agents and Multi-agent Systems. - Times Cited Google Scholar: 12
25	Mariano, P., Pereira, A., Correia, L., Ribeiro, R., Abramov, V., Szirbik, NWilde, Philippe (2001). Simulation of a trading multi-agent system. In Proceedings of the 2001 IEEE International Conference on Systems, Man and Cybernetics - SMC'01. (pp. 3378-3384). - Times Cited Scopus: 10 - Times Cited Google Scholar: 15

- Talk

1	Gameiro, C., Pereira, S., Figueiredo, A., Bernardes da Silva, A., Matos, A. R., Pires, M. CMarques da Silva, J. (2016). Preliminary results on the use of chlorophyll fluorescence and artificial intelligence techniques to automatically characterize plant water status. XIII Simposio Hispano-Portugués de Relaciones Hídricas en las Plantas.
2	Gomes, J., Mariano, P. & Christensen, A. L. (2014). Diversity-based Coevolution of Behaviourally Heterogeneous Multirobot Systems. Workshop on Nature-inspired Techniques for Robotics at PPSN. - Times Cited Google Scholar: 1

• Other Publications

- Other publications

1	Correia, C., Martins, V., Santana, P., Mariano, P., Almeida, A., Baptista, PAlmeida, S.M. (2019). ExpoLIS – An air quality exposure sensing system aiming to change the way people move in cities. In Proceedings of the 2019 7th Iberian Meeting on Aerosol Science and Technology.
2	Duarte, B., Feijão, E., Cruz de Carvalho, R., Marques da Silva, J., Matos, A.R., Cabrita, M.TFonseca, V. (2019). Drugs, diatoms and artificial intelligence: new ways to evaluate toxicity. Presented at CHEERS, "Global changes in estuarine and coastal systems: innovative approaches and assessment tools".
3	T. O. Cruz, C. Macedo, J. N. Silva, Mariano, P. & Jorge Marques da Silva (2017). Using the chlorophyll fluorescence signal and machine learning techniques to automatically identify Quercus species: preliminary results. 3rd general meeting of the EU Cost Action FA1306 - The quest for tolerant varieties: phenotyping at plant and cellular level.
4	Figueiredo, A., Maia, M., Nascimento, R., Laureano, G., Figueiredo, J., Silva, CSilva, M. S. (2017). Plant- pathogen interaction in modern agriculture: grapevine as a case study. Poster presented at the 4th Annual Conference Foster Innovation through Resilient and Efficient Agro Food \& Forestry Systems redeAGRO.
5	Gomes, J., Mariano, P. & Christensen, A. L. (2014). Systematic derivation of behaviour characterisations in evolutionary robotics. International Conference on the Synthesis and Simulation of Living Systems (ALife). - Times Cited Web of Science®: 14 - Times Cited Google Scholar: 27
6	Mariano, P. & Correia, L. (2002). A Game to Study Coordination and Cooperation. 5th Workshop on Deception, Fraud and Trust in Agent Societies. - Times Cited Google Scholar: 3

Research Projects				
Project Title	Role in Project	Partners	Period	

Urban Adaptation and Alert Solutions for a TIMEly (re)Action	Researcher	ISTAR-IUL (IS) - Global coordinator, ISTAR-IUL (DLS), UNIZA - (Slovakia), DANMARKS TEKNISKE UNIVERSITET - (Denmark), WEO SAS - (Luxembourg), KAJO SRO - (Slovakia), ICONS - (Italy), ONE - (Italy), TUU - (Portugal), UP - (Portugal), LIST - (Luxembourg), TECNALIA - (Spain), UDEUSTO - (Spain), TH KOLN - (Germany), ŽSK - (Slovakia), CML - (Portugal), IBS - (Estonia), TEAM - (Spain), VELTIS - (Spain)	2024 - 2028
2024	Trailblazing Inclusive, Sustainable and Resilient Cities	Researcher	lscte - Leader, TH KOLN - (Germany), LAUREA - (Finland), UNI EIFFEL - (France), UNIZA - (Slovakia)

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Member of scientific event committee	Maratona Inter-Universitário de Programação	Universidade de Coimbra	2023
Member of scientific event's organizing committee	ISTAR PhD Meeting Spring 2023	ISTAR	2023
Member of scientific event committee	Maratona Inter-Universitário de Programação	Universidade de Coimbra	2022

Scientific Editing/Reviewing Activities				
Type of Activity	Journal Title	ISSN/Quartile	Perio d	Language
Scientific journal editor	Plants	2223-7747 / Q1	2022 - 2023 -	Portuguese