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José Castro

Professor Auxiliar Convidado

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Department of Social and Enterprise Sciences (ETDA)



Contacts

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Curriculum

I've studied physics and mathematics for a while at the at the University of Lisbon, but ended up graduating in Antropology, in 1996, at the Nova University of Lisbon. Then I began working as an IT consultant for a printing company. In 2007, I left the private sector and started teaching Mathematics at the Higher School for Elementary Teachers Maria Ulrich, where I stayed for seven years.

In 2014, I got my doctoral degree in Philosophy of Contemporary Thought, at the University Lusófona de Humanidades e Tecnologias, with a thesis about volition and human intelligence simulation, using AI.

In 2015, I joined the Centre for the Philosophy of Sciences of the University of Lisbon (CFCUL, now closed), where I came up with the wave-memory interpretation of Quantum Mechanics and started working on the Philosophy of Artificial Intelligence, focusing on the social aspects of AI.

Recently (2022, 2024) I have co-organized the first and the second Portuguese Symposiums in Philosophy and Artificial Intelligence, participated in public events and given interviews to the media about AI and society.

Presently, I am a Professor in the ISCTE-Sintra School of Digital Technologies, where I teach about the societal and ethical impacts of digital technologies and AI on contemporary societies. My actual interests (and concerns) are AI surveillance and human freedom impact, political manipulation using disinformation, virtual and augmented reality design and artificial consciousness.

Research Interests

Artificial Intelligence, disinformation and Democracy.

Virtual and extended reality environments.

Artificial consciousness and deep neural networks.

Academic Qualifications

University/Institution	Type	Degree	Period
Universidade Lusófona de Humanidades e Tecnologias	PhD	Philosophy	2014
Universidade Nova de Lisboa Faculdade de Ciências Sociais e Humanas	Licenciante	Anthropology	1996

Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord
2026/2027	2º	Technology, Economy and Society	Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Politics, Economics and Society; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Digital Technologies and Automation;	Yes
2026/2027	2º	Work, Organizations and Technology	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technology and Sustainable Built Environment; Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health; Bachelor Degree in Politics, Economics and Society; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Digital Technologies and Automation;	No
2026/2027	1º	Technology, Economy and Society	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technology and Sustainable Built Environment; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health;	Yes

2026/2027	1°	Work, Organizations and Technology	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technology and Sustainable Built Environment; Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health; Bachelor Degree in Politics, Economics and Society; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Digital Technologies and Automation;	No
2026/2027	1°	Research Seminar Cybersecurity and Resiliency Research Seminar Cybersecurity and Resiliency	Master Degree in Cybersecurity and Resiliency;	No
2025/2026	2°	Technology, Economy and Society	Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Politics, Economics and Society; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Digital Technologies and Automation;	Yes
2025/2026	2°	Technology, Economy and Society	Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Politics, Economics and Society; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence; Bachelor Degree in Digital Technologies and Automation;	Yes
2025/2026	1°	Technology, Economy and Society	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technology and Sustainable Built Environment; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health;	Yes
2025/2026	1°	Technology, Economy and Society	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technology and Sustainable Built Environment; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health;	Yes
2024/2025	2°	Technology, Economy and Society	Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence;	No

2024/2025	2º	Technology, Economy and Society	Bachelor Degree in Digital Technologies and Information Security; Bachelor Degree in Digital Educational Technologies; Bachelor Degree in Software and Applications Development; Bachelor Degree in Digital Technologies and Artificial Intelligence;	No
2024/2025	1º	Technology, Economy and Society	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health; Bachelor Degree in Politics, Economics and Society;	No
2024/2025	1º	Technology, Economy and Society	Bachelor Degree in Mathematics Applied and Digital Technologies; Bachelor Degree in Digital Technologies and Management; Bachelor Degree in Digital Technologies and Health; Bachelor Degree in Politics, Economics and Society;	No

Supervisions

• M.Sc. Final Projects

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Ana Margarida Magalhães dos Anjos Batista	"Use of Augmented Reality in the development of creative writing, of narrative texts, in the 3rd Year of the 1st Cycle of Basic Education"	--	Developing	Iscte
2	Ana Margarida Magalhães dos Anjos Batista	"Use of Augmented Reality in the development of creative writing, of narrative texts, in the 3rd Year of the 1st Cycle of Basic Education"	--	Developing	Iscte
3	Maria Dorita Rodrigues Serrão	Virtual Learning Environment with AR/VR for the study of living beings in the 1st grade.	--	Developing	Iscte
4	Maria Dorita Rodrigues Serrão	Virtual Learning Environment with AR/VR for the study of living beings in the 1st grade.	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
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1	Nuno Miguel Ferreira de Sousa	Promoting critical thinking in 4th grade Portuguese elementary school students using an escape room about sustainability	Portuguese	Iscte	2025
2	Nuno Miguel Ferreira de Sousa	Promoting critical thinking in 4th grade Portuguese elementary school students using an escape room about sustainability	Portuguese	Iscte	2025

Total Citations

Web of Science®	6
Scopus	5

Publications

• Scientific Journals

- Scientific journal paper

1	José Croca (C110-67F9-81BF) & Castro, P. (2024). De Broglie Scientific Research Program at Lisbon with a comment on the Wave-memory interpretation of Quantum Mechanics. ANNALES DE LA FONDATION LOUIS DE BROGLIE. 48 (1)
2	Croca, J. R., Gatta, M., Castro, P., Moreira, Rui, Gildo Magalhães & J. Alexandre Croca (2024). Sagnac and Michelson-Morley Interferometers Time Precision Evaluation. Physics Essays. 37 (4), 247-251
3	José Croca (C110-67F9-81BF) & Castro, P. (2024). De Broglie Scientific Research Program at Lisbon with a comment on the Wave-memory interpretation of Quantum Mechanics. Annales de la Fondation Louis de Broglie. 48 (1)
4	Croca, J. R., Castro, P., Gatta, M. & Moreira, R. N. (2023). Proposed Experiments to Clarify the Real Nature of the Quantum Waves. Foundations of Physics. - Times Cited Web of Science®: 1 - Times Cited Scopus: 3
5	Castro, P. (2022). Computadores, matemática e significado. Khronos.
6	Croca, J. R., Castro, P., Moreira, Rui & Mário Gatta (431D-02D0-FAFE) (2021). Louis de Broglie Realistic Research Program and the experimental detection of Quantum Waves. Annales de la Fondation Louis de Broglie. 46 (1), 1-19 - Times Cited Web of Science®: 2
7	Castro, P. (2020). Lying, computers and self-awareness. Kairos. Journal of Philosophy & Science. 24 (1), 10-34
8	José Croca, Moreira, Rui, Gatta, Mário & Castro, P. (2019). Experiments on the Speed of Light. Journal of Applied Mathematics and Physics. 07 (05), 1240-1249

9	Croca, J. R., Moreira, R. N., Gatta, M. & Castro, P. (2018). A Possible Experimental Way to Measure the One-Way Speed of Light. <i>Theoretical Physics</i> . 3 (4)
10	Castro, P. (2018). On the Foundations of Eurhythmic Physics: A Brief Non Technical Survey. <i>International Journal of Philosophy</i> . 5 (6), 50 - Times Cited Web of Science®: 1
11	Castro, P., Gatta, M., Croca, J. R. & Moreira, R. (2018). Spacetime as an Emergent Phenomenon: A Possible Way to Explain Entanglement and the Tunnel Effect. <i>Journal of Applied Mathematics and Physics</i> . 06 (10), 2107-2118 - Times Cited Web of Science®: 2
12	Castro, P. (2018). An Introduction to Eurhythmic Philosophy. <i>Brolly - Journal of Social Sciences</i> . 1 (1)
13	Castro, P., Croca, J. R., Gatta, M. & Moreira, R. (2017). Generalized Uncertainty Relations in Quantum Mechanics and the Principles of Completeness in Physics. <i>Physical Science International Journal</i> . 16 (4), 1-9
14	Croca, J. R., Castro, P., Gatta, M., A., Cardoso & Moreira, R. (2017). A Pilot-Wave Gravity and the Titius-Bode Law. <i>New Horizons in Mathematical Physics</i> . 1 (3)
15	Castro, P. (2017). O Princípio da Eúritmia nas Ciências Sociais e Humanas (The Eurythmy Principle in the Social and Human Sciences). <i>Intelligere</i> . 3 (1), 99-116
16	Castro, P. (2017). Computing Machinery, Intelligence and Undecidability. <i>Journal of Theoretical and Computational Science</i> . 04 (02)

• Books and Book Chapters

- Book editor

1	Castro, P., Bush, J. W. M. & Croca, J. R. (2024). <i>Advances in Pilot Wave Theory</i> . Springer International Publishing.
2	Olga Pombo, Castro, P. & et all (2017). <i>Debates da Filosofia da Ciência Contemporânea. VIII Jornadas Ibéricas de Filosofia da Ciência (Debates of the Philosophy of Contemporary Science. VIII Iberian Proceedings in Philosophy of Science)</i> . CFCUL.
3	José Croca, Castro, P. & et all (2017). <i>Eúritmia, complexidade e racionalidade numa perspetiva interdisciplinar (Eurythmy, complexity and rationality from an interdisciplinary perspective)</i> . Lisbon. CFCUL.

- Book chapter

1	Castro, P. (2026). A interpretação da Onda de Memória da Mecânica Quântica. In <i>Filosofia dos Físicos</i> . (pp. 67-102). S. Paulo: LF Editorial.
2	Castro, P. (2024). The Wave-Memory Interpretation of Quantum Mechanics. In P. Castro and John Bush and José Croca (C110-67F9-81BF) (Ed.), <i>Boston Studies in the Philosophy and History of Science</i> . (pp. 189-226).: Springer International Publishing.

3	Castro, P., W. M. Bush, John & José Croca (2024). Pilot Wave Theory in the Twenty-First Century. In P. Castro and John Bush and José Croca (C110-67F9-81BF) (Ed.), Boston Studies in the Philosophy and History of Science. (pp. 1-6): Springer International Publishing. - Times Cited Scopus: 2
4	Castro, P. (2023). O Humanismo Digital do Século XXI e a Nova Filosofia da Inteligência Artificial (Digital Humanism of the 21st Century and the New Philosophy of Artificial Intelligence). In 88 Vozes sobre Inteligência Artificial. (pp. 558-572). Lisboa: ISCTE Executive Education - Instituto Universitário de Lisboa - Oficina do Livro.
5	Simões da Fonseca, José Luís & Castro, P. (2017). Social Processes. In de natura animae psychologiae principia mathematica et philosophyae naturalis. (pp. 1-62): Gatha Cognition.

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	Castro, P. (2021). Three Limitations of Algorithmic Reason: Steering the Human Mind in the Twenty First Century. In Proceedings of the 3rd European Conference on the Impact of Artificial Intelligence and Robotics ECIAIR 2021. (pp. 26-34). Lisbon: Published by Academic Conferences International Limited Reading UK.
2	Castro, P. (2018). Philosophical consequences from the Turing Test Undecidability. In Web of Knowledge: A Look into the Past, Embracing the Future. Évora: Sílabas & Desafios.
3	Castro, P. (2015). Uma introdução à Filosofia Eurítmica (An Introduction to Eurhythmic Philosophy). In Eunitimia - Complexidade e Racionalidade numa Perspectiva Interdisciplinar. (pp. 1-15). Lisbon: CFCUL.
4	Castro, P. (2014). Estados e Grandezas Físicas na Física do Devir (States and Physical Quantities in the Physics of Becoming). In Actas das VIII Jornadas Ibéricas - Debates de Filosofia da Ciência Contemporânea. Lisbon: CFCUL.

- Talk

1	Castro, P. (2025). Participation in the round table "Digital transformation and the European pillar of social rights: what policies?". 4th Conference of the SocioDigital Lab for Public Policy.
2	Castro, P. (2024). de Broglie reloaded - Ondas Piloto e a Interpretação da Onda de Memória da Mecânica Quântica. Seminário do Grupo de Lógica, Linguagem e Ciência -Universidade Federal do Tocantins / Brasil.
3	Castro, P. (2023). The Wave-memory interpretation of Quantum Mechanics - Bridging between pilot-wave theory and standard QM formalism. Foundations 2023 - The 21st European Conference on Foundations of Physics.
4	Castro, P. (2023). The wave-memory interpretation of quantum mechanics: an attempt to unify pilot-wave theory and standard quantum mechanics formalism. Open Topics in Philosophy of Physics.
5	Castro, P. (2023). A Wave-memory interpretation for Quantum Mechanics - An attempt to unify pilot-wave theory with standard QM formalism. 4th Lisbon International Conference on Philosophy of Science (LICPOS 2023).

6	Castro, P. (2022). Speaker in the round table about Artificial Intelligence and Democracy. Inteligência Artificial e Democracia.
7	Castro, P. (2022). Memory, physical phenomena and quantum waves. 7th Panhellenic Conference on Philosophy of Science.
8	Castro, P. (2022). Pilot wave theory and the Hydrodynamic Quantum Analogs movement . Hi-Phi International Conference - History of Science and the Philosophy of Science.
9	Castro, P. (2021). Three limitations for Algorithmic Reason: Steering the Human Mind in the Twenty First Century. European Conference on the Impact of AI and Robotics (ECIAIR 2021).
10	Castro, P. (2021). A strong nomological interpretation of Quantum Mechanics. - towards a theory of physical encoded information. Advances in pilot wave Theories - Concurrently hosting Hydrodynamic Quantum analogs (HQA-2021).
11	Castro, P. (2020). Can a computer lie? Attributing legal responsibility to AI. European Conference on the Impact of AI and Robotics (ECIAIR 2020).
12	Castro, P. (2019). Philosophical Contributions of Nonlinear Physics to Quantum Gravity. Space and Time: An Interdisciplinary Approach.
13	Castro, P. (2019). Three Limitations for Algorithmic Reason. Open Epistemologies - Mach, Bachelard, Feyerabend.
14	Castro, P. (2018). Computing Machinery, Intelligence and Undecidability. Web of Knowledge. A look into the Past, embracing the Future.
15	Castro, P. (2017). Generalized Uncertainty Relations in Quantum Mechanics and the Principles of Completeness. INTERNATIONAL COLLOQUIUM WHAT IS A PHYSICAL ENTITY? And João Paisana lectures.

• Other Publications

- Doctoral Thesis

1	Castro, P. (2014). A epistemologia da escolha: sobre a possibilidade da simulação artificial da inteligência humana (The epistemology of choice: about the possibility of artificial simulation of human intelligence).
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Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	2nd Portuguese Symposium on Philosophy and Artificial Intelligence		2024
Member of scientific event committee	4th Lisbon International Conference on Philosophy of Science (LICPOS 2023)	Centre for Philosophy of Sciences of the University of Lisbon (CFCUL)	2023

Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	Lisbon AI Seminar		Since 2023
Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	1.º Simpósio português sobre Filosofia e Inteligência Artificial - "Ser Humano na Era da Inteligência Artificial". (1st Portuguese Symposium on Philosophy and Artificial Intelligence - Being human in the age of Artificial Intelligence)		2022
Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	Reading group on Philosophy of Artificial Intelligence and Computation		Since 2022
Coordination of scientific event (with scientific committee) outside of ISCTE-IUL	International Conference on Advances in Pilot Wave Theory Concurrently Hosting Hydrodynamic Quantum Analogs (HQA-2021)		2021

Diffusion Activities

Activity Type	Event Title	Activity Description	Year
Talk/Conference in public diffusion event	Round table on Artificial Intelligence in decision support: communication and freedom	Contributed talk entitled "AI and Human Freedom" and participation in round table on Artificial Intelligence in decision support: communication and freedom	2025
Talk/Conference in public diffusion event	Abrantes Philosophy Festival.	Participation in the round table discussion on language in the digital age at the Abrantes Philosophy Festival.	2025
Talk/Conference in public diffusion event	4th Conference of the SocioDigital Lab for Public Policy	Participation in the round table "Digital transformation and the European pillar of social rights: what policies?"	2025
Talk/Conference in public diffusion event	"O Futuro do Futuro" on the impact of Artificial Intelligence on society, recommendation systems and monetization of behaviours.	Podcast interview	2024
Talk/Conference in public diffusion event	Café do Parlamento - Responsible artificial intelligence	Public intervention	2024
Participation in general diffusion news tv show	The algorithm revolution: past, present and future of Artificial Intelligence	Intervention in TV show	2024
Publication in general diffusion news outlet	ChatGPT is comparable to an oracle	Interview for the Jornal de Negócios	2023
Talk/Conference in public diffusion event	AI portugal Podcast - Philosophy of Mind and Consciousness	Podcast interview	2023
Publication in general diffusion news outlet	Artificial intelligence: platforms have to fight disinformation, not users	Interview for the newspaper Público	2023
Publication in general diffusion news outlet	There are no bad bots. For now	Interview for the newspaper Expresso	2023

Talk/Conference in public diffusion event	Podcast 45 GRAUS - Paulo Castro - Philosophy of Science, Artificial Intelligence, Consciousness, Darwinism, Economics, Technological Progress	Podcast interview	2018
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