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Elsa Cardoso

Professora Associada

ISTAR-Iscte - Information Sciences, Technologies and Architecture Research Centre
Department of Information Science and Technology (ISTA)



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Curriculum

Elsa Cardoso is an associate professor at ISCTE - Instituto Universitário de Lisboa (ISCTE-IUL), in the Department of Information Science and Technology of the School of Technology and Architecture, and director of the Master's Degree in Integrated Business Intelligence Systems. She is a researcher at the Information Science, Technology and Architecture Research Center (ISTAR-Iscte) and the Information Systems and Decision Support Group at INESC-ID Lisbon, Portugal. She has a PhD (European Doctorate) in Information Sciences and Technologies from ISCTE-IUL, specializing in Business Intelligence. She is co-coordinator of the data visualization area at the DAViD Lab-Iscte (Advanced Data Digitization and Visualization Laboratory) created in February 2025, in collaboration with the Portuguese Mobility and Transportation Institute (IMT). She is a member of the executive committee of the Artificial Intelligence Competence Center for Public Administration (IA>>AP) of the ISCTE CI-CVTT Association.

Her research interests include Business Intelligence & Analytics, data visualization, Data Warehouse, and strategic information systems (Balanced Scorecard) applied to Higher Education, Science and Public Administration.

She is a member of the Business Intelligence Special Interest Group of EUNIS (European University Information Systems organization). She was the leader of this SIG from 2013 until 2019. Since 2022, she is also a member of the Enterprise Architecture SIG of EUNIS, working on capability maturity models for Higher Education. She has participated in several national and international research projects.

She is currently working on the following projects:

xSHARE: Expanding the European EHRxF to share and effectively use health data within the EHDS (101136734 - Horizon-

National Programme for Open Science and Open Research Data (PRR). [2024-2026]

Projects already finalized:

Study for the knowledge of fraud in the structural funds in Portugal (POAT-01-6177-FEDER- 000126). Principal Investigator. [2022-2023]

Digital Transformation in Research: Science Management and Open Science (POCI-05-5762-FSE-000438). [2021-2023]

MAIPro – Project Non-compliance Monitoring and Alert (06/POAT/2021). [2022-2023]

IRIS – Summarizing and Informing Decisions: Application of Artificial Intelligence Techniques at the Supreme Court of Justice. Researcher, integrating the INESC ID team. [2021-2022]

Healthcare Insight – Units Performance Management (HI-UPM/2014/38567; FEDER-QREN). Principal Investigator from Iscte. [2014-2015]

GRADUA – Graduates Advancement and Development of University capacities in Albania (Erasmus+ project No. 585961-EPP-1-2017-1-AL-EPPKA2-CBHE-SP (2017 -2926/001 -001). [2019-2021]

iLU – Integrative Learning from Urban Data (DSAIPA/DS/0111/2018). Researcher, integrating the INESC ID team. [2018-2022]

IA-Incentivos – Artificial Intelligence in Incentive Management (POCI-05-5762-FSE-000231). [2020-2021]

<https://ciencia.iscte-iul.pt/authors/elsa-cardoso/cv>

Research Interests

Business Intelligence and Analytics

Data Visualization

Decision support systems

Data Warehouse

Strategic Information Systems, Balanced Scorecard

Academic Qualifications

University/Institution	Type	Degree	Period
ISCTE-Instituto Universitário de Lisboa	PhD	Ciências e Tecnologias da Informação	2011
Universidade de Lisboa - Instituto Superior Técnico	M.Sc.	Engenharia Informática e de Computadores	2003
Universidade de Lisboa - Instituto Superior Técnico	Licenciante	Engenharia Electrotécnica e de Computadores	1995

Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord
2026/2027	2°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2026/2027	2°	Data Warehouse Systems II		Yes
2026/2027	2°	Information Visualization	Master Degree in Integrated Business Intelligence Systems;	Yes
2026/2027	2°	Seminar on Integrated Business Intelligence Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2026/2027	1°	Business Intelligence Systems Project Management	Master Degree in Integrated Business Intelligence Systems;	Yes
2026/2027	1°	Data Warehouse and Business Intelligence Systems		Yes
2026/2027	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	Yes
2026/2027	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2026/2027	1°	Data-Driven Decision Making		Yes
2026/2027	1°	Dissertation in Integrated Decision Support Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2025/2026	2°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2025/2026	2°	Patterns and Knowledge Extraction Guided by Data		Yes
2025/2026	2°	Data Warehouse Systems II		Yes
2025/2026	2°	Information Visualization	Master Degree in Integrated Business Intelligence Systems;	Yes
2025/2026	2°	Seminar on Integrated Business Intelligence Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2025/2026	1°	Business Intelligence Systems Project Management		Yes
2025/2026	1°	Data Warehouse and Business Intelligence Systems		Yes
2025/2026	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	Yes

2025/2026	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2025/2026	1°	Dissertation in Integrated Decision Support Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	2°	Data Warehouse System II		Yes
2024/2025	2°	Business Intelligence Systems Project Management	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	2°	Data Warehouse Systems II	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	2°	Ai and Business Change	Other programme in Advanced Programa in Digital Health;	Yes
2024/2025	1°	Data Warehouse System I		Yes
2024/2025	1°	Dissertation in Integrated Business Intelligence Systems		Yes
2024/2025	1°	Data Warehouse and Business Intelligence Systems	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Science and Business Management;	Yes
2024/2025	1°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	No
2024/2025	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	1°	Data-Driven Decision Making		Yes
2024/2025	1°	Dissertation in Integrated Decision Support Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2024/2025	1°	Business Intelligence Applications		Yes
2023/2024	2°	Business Intelligence Systems Project Management	Master Degree in Integrated Business Intelligence Systems;	Yes
2023/2024	2°	Data Warehouse Systems II	Master Degree in Integrated Business Intelligence Systems;	Yes
2023/2024	2°	Ai and Business Change	Other programme in Advanced Programa in Digital Health;	No
2023/2024	1°	Data Warehouse and Business Intelligence Systems	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Science and Business Management;	Yes
2023/2024	1°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes

2023/2024	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	Yes
2023/2024	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2023/2024	1°	Dissertation in Integrated Decision Support Systems	Master Degree in Integrated Business Intelligence Systems;	Yes
2022/2023	2°	Data Warehouse System II		Yes
2022/2023	2°	Strategic Information Systems and Performance Management		Yes
2022/2023	2°	Business Intelligence Systems Project Management	Master Degree in Integrated Business Intelligence Systems;	Yes
2022/2023	2°	Introduction to Data Science	Institutional Degree in Escola de Tecnologias e Arquitetura;	No
2022/2023	2°	Data Warehouse Systems II	Master Degree in Integrated Business Intelligence Systems;	Yes
2022/2023	2°	Business Intelligence II		Yes
2022/2023	1°	Data Warehouse System I		Yes
2022/2023	1°	Data Warehouse and Business Intelligence Systems	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Science and Business Management;	Yes
2022/2023	1°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2022/2023	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	Yes
2022/2023	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2022/2023	1°	Ai and Business Change	Other programme in Advanced Programa in Digital Health;	No
2022/2023	1°	Business Intelligence I		Yes
2021/2022	2°	Data Warehouse System II		Yes
2021/2022	2°	Strategic Information Systems and Performance Management		Yes
2021/2022	2°	Business Intelligence Systems Project Management	Master Degree in Integrated Business Intelligence Systems;	Yes
2021/2022	2°	Storytelling		No

2021/2022	2°	Introduction to Data Science	Institutional Degree in Escola de Tecnologias e Arquitetura;	No
2021/2022	2°	Data Warehouse Systems II	Master Degree in Integrated Business Intelligence Systems;	Yes
2021/2022	1°	Data Warehouse System I		Yes
2021/2022	1°	Introduction to Data Science	Institutional Degree in Escola de Tecnologias e Arquitetura;	No
2021/2022	1°	Data in Science, Bussiness and Society	Bachelor Degree in Data Science (PL); Bachelor Degree in Data Science;	No
2021/2022	1°	Data Warehouse and Business Intelligence Systems	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Science and Business Management;	Yes
2021/2022	1°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2021/2022	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	No
2021/2022	1°	Data Warehouse Systems I	Master Degree in Integrated Business Intelligence Systems;	Yes
2021/2022	1°	Business Intelligence I		Yes
2020/2021	2°	Data Warehouse System II		Yes
2020/2021	2°	Strategic Information Systems and Performance Management		Yes
2020/2021	2°	Introduction to Data Science	Institutional Degree in Escola de Tecnologias e Arquitetura;	No
2020/2021	2°	Distributed Information Systems Integration Project	Bachelor Degree in Computer Science and Business Management (PL); Bachelor Degree in Computer Engineering;	No
2020/2021	2°	Data Warehouse Systems II		Yes
2020/2021	2°	Business Intelligence II		Yes
2020/2021	1°	Data Warehouse System I		Yes
2020/2021	1°	Dissertation in Integrated Business Intelligence Systems		No
2020/2021	1°	Data in Science, Bussiness and Society	Bachelor Degree in Data Science (PL); Bachelor Degree in Data Science;	No
2020/2021	1°	Data Warehouse and Business Intelligence Systems		Yes

2020/2021	1°	Design and Development of Business Intelligence Applications	Master Degree in Integrated Business Intelligence Systems;	Yes
2020/2021	1°	User Experience and Visualization of Information	Master Degree in Computer Engineering;	No
2020/2021	1°	Data Warehouse Systems I		Yes
2020/2021	1°	Business Intelligence I		Yes
2019/2020	2°	Data Warehouse System II		Yes
2019/2020	2°	Strategic Information Systems and Performance Management		Yes
2019/2020	2°	Dissertation in Integrated Business Intelligence Systems		No
2019/2020	2°	Visual Analytics		Yes
2019/2020	2°	Information Visualization Project II		Yes
2019/2020	2°	Introduction to Data Science	Institutional Degree in Escola de Tecnologias e Arquitetura;	No
2019/2020	2°	Business Intelligence II		Yes
2019/2020	1°	Business Intelligence I		Yes
2018/2019	2°	Business Intelligence Applications II		Yes
2018/2019	2°	Data Warehouse System II		Yes
2018/2019	2°	Dissertation in Integrated Business Intelligence Systems		Yes
2018/2019	2°	Business Intelligence II		Yes
2018/2019	1°	Data Warehouse System I		Yes
2018/2019	1°	Strategic Information Systems and Performance Management		Yes
2018/2019	1°	Dissertation in Integrated Business Intelligence Systems		Yes
2018/2019	1°	Storytelling		No
2018/2019	1°	Information Visualization Tools		Yes
2018/2019	1°	Visual Analytics		Yes

2018/2019	1°	Business Intelligence I		Yes
2018/2019	1°	Integrated Business Intelligence Systems		Yes
2017/2018	2°	Business Intelligence Applications II		Yes
2017/2018	2°	Data Warehouse System II		Yes
2017/2018	2°	Dissertation in Integrated Business Intelligence Systems		Yes
2017/2018	2°	Visual Analytics		Yes
2017/2018	2°	Information Visualization Project II		No
2017/2018	2°	Business Intelligence II		Yes
2017/2018	1°	Data Warehouse System I		Yes
2017/2018	1°	Strategic Information Systems and Performance Management		Yes
2017/2018	1°	Dissertation in Integrated Business Intelligence Systems		Yes
2017/2018	1°	Storytelling		No
2017/2018	1°	Information Visualization Tools		Yes
2017/2018	1°	Information Visualization Project I		No
2017/2018	1°	Business Intelligence I		Yes
2017/2018	1°	Integrated Business Intelligence Systems		Yes
2016/2017	2°	Dissertation in Integrated Business Intelligence Systems		Yes
2016/2017	2°	Business Intelligence II		Yes
2016/2017	2°	Business Intelligence II		Yes
2016/2017	1°	Dissertation in Integrated Business Intelligence Systems		Yes
2016/2017	1°	Business Intelligence I		Yes
2016/2017	1°	Business Intelligence I		Yes

2016/2017	1°	Business Intelligence I		Yes
2015/2016	2°	Business Data Mining		Yes
2015/2016	2°	Dissertation in Integrated Business Intelligence Systems		Yes
2015/2016	2°	Business Intelligence II		Yes
2015/2016	1°	Dissertation in Integrated Business Intelligence Systems		Yes
2015/2016	1°	Business Intelligence I		Yes
2015/2016	1°	Business Intelligence I		Yes
2014/2015	2°	Business Data Mining		Yes
2014/2015	2°	Master Dissertation in Business Intelligence		Yes
2014/2015	2°	Business Intelligence II		Yes
2014/2015	1°	Master Dissertation in Business Intelligence		Yes
2014/2015	1°	Advanced Topics in Business Intelligence		Yes
2014/2015	1°	Business Intelligence I		Yes
2014/2015	1°	Business Intelligence I		Yes
2014/2015	1°	Business Intelligence Seminar		Yes
2013/2014	2°	Business Intelligence Applications I		Yes
2013/2014	2°	Business Data Mining		Yes
2013/2014	2°	Data Warehouse System II		Yes
2013/2014	2°	Strategic Information Systems and Performance Management II		Yes
2013/2014	2°	Master Dissertation in Business Intelligence		Yes
2013/2014	2°	Business Intelligence II		Yes
2013/2014	1°	Data Warehouse System I		Yes

2013/2014	1°	Strategic Information Systems and Performance Management I		Yes
2013/2014	1°	Master Dissertation in Business Intelligence		Yes
2013/2014	1°	Business Intelligence I		Yes
2013/2014	1°	Integrated Business Intelligence Systems		Yes
2012/2013	2°	Business Intelligence II		Yes
2012/2013	1°	Business Intelligence I		Yes
2011/2012	2°	Strategic Information Systems and Performance Management I		Yes
2011/2012	2°	Data Warehouse System II		Yes
2011/2012	2°	Strategic Information Systems and Performance Management II		Yes
2011/2012	2°	Business Intelligence II		Yes
2011/2012	1°	Data Warehouse System I		Yes
2011/2012	1°	Strategic Information Systems and Performance Management I		Yes
2011/2012	1°	Business Intelligence I		Yes
2010/2011	2°	Strategic Information Systems and Performance Management I		Yes
2010/2011	2°	Business Intelligence II		Yes
2010/2011	1°	Data Warehouse System I		Yes
2010/2011	1°	Business Intelligence I		Yes
2009/2010	2°	Strategic Information Systems and Performance Management I		Yes
2009/2010	2°	Strategic Information Systems and Performance Management II		No
2009/2010	2°	Business Intelligence II		Yes
2009/2010	1°	Data Warehouse System I		Yes

2009/2010	1°	Strategic Information Systems and Performance Management I		Yes
2009/2010	1°	Business Intelligence I		Yes
2008/2009	2°	Business Intelligence II		No
2008/2009	2°	Business Intelligence II		No
2008/2009	1°	Business Intelligence I		No
2008/2009	1°	Business Intelligence I		No
2007/2008	2°	Business Intelligence II		Yes
2007/2008	1°	Business Intelligence II		Yes

Supervisions

• Ph.D. Thesis

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Ricardo Jorge Alves Santos	Automated business Problem-solving methodology	English	Developing	Iscte
2	Tan Xiaoying	Factors Influencing Patient Safety in Internet Medical Care	English	Developing	Iscte
3	Rui Jorge Valentim Vitorino	Application of Business Intelligence and Semantic Web Technologies in Public Administration: An Ontology-Based Approach for the Balanced Scorecard	--	Developing	Iscte
4	Maria Augusta Lopes Correia	Breast cancer diagnostic trajectories: Between agency and structure	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	António Lorvão Ferreira Antunes	Application of Semantic Web Techniques in Data Warehouse and Business Intelligence Systems	English	Iscte	2024

2	Jiang Yichen	The Operation Strategies with Chinese characteristics on the Intelligent Process Management of Home-based Health Care Service	English	Iscte	2022
3	Yang Bin	Business-IT Alignment from Operational Level: Empirical Evidence from the Bank of Qingdao, China	English	Iscte	2021
4	Jin Chenhui	Impacts of mobile health technology adoption on service quality and patient satisfaction	English	Iscte	2019
5	Zhu Qingqing	Service Model Innovation for Public Administration: A Case Study of Guizhou Entry-Exit Inspection and Quarantine Bureau	English	Iscte	2017
6	Xu Xin	An empirical study of patient-centered hospital clinical process: dimensions, antecedents and outcomes	English	Iscte	2016

• M.Sc. Dissertations

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Afonso Maria Mendes Peças	Automatic Detection of Fictitious Bibliographic References in Academic Theses	--	Developing	Iscte
2	Vaag Mkrtychyan	Identification of Potential Impact Zones for Dangerous Goods Rail Accidents: LxDataLab Challenge case study	--	Developing	Iscte
3	João Francisco da Costa Pandaio	Author Name Disambiguation: A Content-Based Deep Learning Approach for Academic Publications	--	Developing	Iscte
4	Eduardo José da Silva Bagulho	Identification of Patterns and Forecasting of Electricity Consumption in the Municipality of Maia	--	Developing	Iscte
5	Otavio Augusto Dreyer Martins	Previsão de vendas com Machine Learning: Uma abordagem preditiva integrada ao processo de tomada de decisão em contexto empresarial	--	Developing	Iscte
6	Gonçalo Manuel Carvalho Carrasco	Outlier Detection and Annotation in IoT: An Interactive Application for Sensor Data from Civil Engineering Structures	--	Developing	Iscte
7	Diogo António Faia Fernandes	A Data Quality Framework for Sensing Data	English	Delivered	Iscte

8	Bruno Filipe Celestino Pedro	Análise preditiva de indicadores demográficos de Portugal	--	Developing	Iscte
9	Catarina Dias Francisco	Data Catalogue and Semantic Layer Integration for Advanced Business Intelligence Analysis	--	Developing	Iscte
10	Fábio Marques Ferreira	Reter ou Perder? Machine Learning na Previsão de Churn no retalho alimentar online	--	Developing	Iscte
11	Catarina de Brito Carvalho Moreira	Evaluating Dashboard Readability: An Experimental Study Using Eye-Tracking	--	Developing	Iscte
12	Maria Helena Correia de Araújo Krippahl	Development of an Analytical System applied to the ECOS survey, a public health observation tool	--	Developing	Iscte
13	Francisco Soares Saraiva Rodrigues	Integrating LLM Models in Business Intelligence: Enhancing Data-Driven Decision Making with Microsoft Copilot in Power BI at Zurich Insurance	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Afonso Brandão Crespo	Analysis of Economic and Social Inequalities in Housing	Portuguese	Iscte	2026
2	Pedro Miguel Fernandes Lamas	Analysis of economic and social inequalities in Labour, Income and Poverty	Portuguese	Iscte	2026
3	Miguel Leal Palma Fernandes D'Aguiar	Student Learning Monitoring and Gamification in Higher Education: Development and Integration of Learning Scorecard 3.0 with Moodle	English	Iscte	2025
4	Tiago Augusto Mendes Teixeira Barbosa	Melodies and Data: An Analytical Perspective on Predicting Human Behaviour in Music Learning.	Portuguese	Iscte	2024
5	Pedro Miguel Silva de Sousa	Identifying Patterns in City Municipality Incident Reports by Lisbon Citizens: A Data-Driven Analysis	English	Iscte	2024
6	Abelardo Miguel Ibarra Mendoza	A framework for open data quality assessment	English	Iscte	2024
7	Tiago Filipe Martins Tavares	Territorial Inequalities in Secondary Education in Portugal	Portuguese	Iscte	2024
8	Rodrigo Miguel Jorge Mendes	Impact on academic success of changes in the student's life	Portuguese	Iscte	2024

9	Afonso Chen Miao	Forecast of cancellation of projects in the management of public funds	English	Iscte	2023
10	Tiago Afonso Frade Martins	Data Science Applied to Public Fund Management	English	Iscte	2023
11	João Tomás Ferreira Guerra	Data Analysis to detect Successful Strategies in Education	Portuguese	Iscte	2023
12	Rui Filipe Correia Ferreira	Implementation of a Monitoring System for Students' Learning Paths	English	Iscte	2023
13	João Maria Sousa Gomes Neto	Analytical Enrichment: A Target To Source Approach for Missing Requirements in Decision Support Systems	English	Iscte	2022
14	Maria João Almeida Casimiro Antunes	Development of dashboards to monitor the supply chain: the case of BA Glass	Portuguese	Iscte	2022
15	Nuno Miguel Soares Fialho de Carvalho	Student Data Prediction	English	Iscte	2021
16	Sandrina Cristele Pereira Vieira	Research on User Experience for Children	English	Iscte	2021
17	Bernardo Armindo Valente Rodrigues	The importance of digital services in consumer choice: the case of the retail banking sector in Portugal	Portuguese	Iscte	2021
18	Miguel Ângelo Damião Lopes	Use of ontologies for educational data management: Learning Scorecard case study	Portuguese	Iscte	2021
19	Nicole Furtado Oliveira	ETL for Data Science? A Case Study.	English	Iscte	2021
20	Rita Sofia da Silva Antunes	DATUS: Dashboard Assessment Usability Model - a case study with student dashboards	English	Iscte	2020
21	João Pedro Sousa Henriques	Searching for associations between social media trending topics and organizations	English	Iscte	2020
22	Hussein Alikhan Sacoor	A decision support system for urban mobility improvement	Portuguese	Iscte	2020
23	Nuno Francisco Castro da Gama Antunes	OMEKO - Generating Personalized Business Card Designs from Images	English	Iscte	2020
24	Marta Timóteo Pereira	Platform for Learning and Assessment of Skills in Pre-School Education	Portuguese	Iscte	2020
25	Andre Luiz Monteiro	The use of machine learning methods in the process of credit risk management in banking institutions.	Portuguese	Iscte	2019
26	Paula Alexandra Pereira de Oliveira	Data Warehouse Automation Trick or Treat?	English	Iscte	2019

27	Francisco António Couceiro Torres Barão Rações	Learning Scorecard: Visualizing student learning experience in Higher Education	Portuguese	Iscte	2018
28	Tiago Miguel Garcez Pateiro	Visualization and Analytics of Codicological data of Hebrew books	Portuguese	Iscte	2018
29	Tiago Alexandre Maurício Pedroso	Gamification to improve student learning experience: the case study of Learning Scorecard	Portuguese	Iscte	2018
30	Filipe Galvão Chambel Caçador	Big Data Analytics Applied to Sensor Data of Engineering Structures: Predictive Methods	English	Iscte	2017
31	António Lorrão Ferreira Antunes	Big Data Analytics Applied to Sensor Data of Engineering Structures: Automatic Detection of Outliers	Portuguese	Iscte	2017
32	Daniela Saraiva da Costa	Learning Scorecard: plataforma para a monitorização da experiência de aprendizagem de alunos no Ensino Superior aplicando técnicas de Business Intelligence e Gamificação	Portuguese	Iscte	2017
33	Carlos Manuel Nunes Lima	Previsão de consumo de energia elétrica em contexto de Smart Grids	Portuguese	Iscte	2015
34	Filipe João Oca Chelêu Simões Vieira	Análise à qualidade da rede Wlan do ISCTE-IUL	Portuguese	Iscte	2015
35	Filipa Alexandra Gaspar Martins Mendes Gomes	Proposta de modelo de maturidade para repositórios digitais.	Portuguese	Iscte	2015
36	Ricardo José Gonçalves da Silva	"Aplicação do Business Model Canvas e de Balanced Scorecard a Repositórios Digitais	Portuguese	Iscte	2015
37	Miguel Hugo Domingos de Oliveira	The study of usability and efficiency in Business Intelligence application	English	Iscte	2015
38	Marta Raquel Ferreira Pinheiro	Developing a Business Intelligence Initiative in Higher Education	English	Iscte	2014
39	Orlando José Constâncio Rebelo Colaço	Caracterização do DW/BI em Portugal - um estudo sobre os DW/BI das maiores empresas portuguesas	Portuguese	Iscte	2013
40	Célia Maria Farinha da Silva Corte	Geração de retratos Pordata	Portuguese	Iscte	2013
41	Pedro Nuno Pacheco Marques	Avaliação de modelos de maturidade para sistemas de Business Intelligence: caso de estudo TAP Portugal	Portuguese	Iscte	2013
42	Pedro Emanuel Ferreira Lourenço	Evaluation of Business Intelligence Application Design Using the Principles of Visual Perception	English	Iscte	2013

43	Vicente Nuno Sá Canhoto	Recomendação de musica: comparação entre collaborative Filtering e Context Filtering	Portuguese	Iscte	2013
44	Patrícia Vanessa Duarte Mateus	Indicadores de empregabilidade do ISCTE-IUL	Portuguese	Iscte	2013
45	Tiago Miguel Henriques Martinho	Dashboard Design Applied to the ITILV3 Problem Management Process: A case study at ISCTE-IUL	English	Iscte	2013
46	Pedro Miguel dos Santos Lopes	Centros de Competência de Business Intelligence. Caso de Estudo: Banco de Portugal	Portuguese	Iscte	2012
47	Ricardo Carlos Alexandre Figueiredo Sousa	Desenvolvimentos do Sistema de Apoio à Decisão para a melhoria de gestão de processos de negócio numa empresa do sector empresarial do estado: o estudo de caso da Empresa de Desenvolvimento e Infra-estruturas do Alqueva, SA	Portuguese	Iscte	2012
48	Jaqueline Lima Pereira Cerqueira	Modelação de processos de gestão de propinas no contexto universitário - o caso de estudo do ISCTE-IUL	Portuguese	Iscte	2012
49	Ricardo Nuno Gaspar da Silva Oliveira Barroso	--	--	Iscte	2011

• M.Sc. Final Projects

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Filipe Ferreira Cardoso Leitão	Digital Preservation of Public Information in the Portuguese Public Administration: The Information System of the Institute for Mobility and Transpor	--	Developing	Iscte
2	José Miguel Beirão Lamela Gomes dos Santos	Dos dados à informação. Da informação ao conhecimento. Como a DGAV pode contribuir para a criação de conhecimento pela disponibilização de dados abertos.	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
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1	Rui Jorge Valentim Vitorino	Implementation of a Business Intelligence Strategy at the General Secretariat of the Government: Modernization, Transparency, and Strategic Alignment	Portuguese	Iscte	2025
2	Diogo Manuel Coelho Morais dos Santos	Evaluating the impact of implementing a gamified online store on a game server's business: A comparison between Portugal and the United States	Portuguese	Iscte	2022

Total Citations

Web of Science®	112
Scopus	202

Publications

• Scientific Journals

- Scientific journal paper

1	Crespo, A., Barateiro, J. & Cardoso, E. (2026). Analyzing economic and social inequalities in housing: A visual storytelling case study in Portugal. <i>World</i> . 7 (5)
2	Antunes, A. L., Cardoso, E. & Barateiro, J. (2025). The Balanced Scorecard ontology: A semantic approach to enhance strategy management. <i>IEEE Engineering Management Review</i> . 53 (4), 121-140 - Times Cited Web of Science®: 2 - Times Cited Scopus: 3 - Times Cited Google Scholar: 3
3	Antunes, A. L., Barateiro, J. & Cardoso, E. (2024). Strategic analysis in the public sector using semantic web technologies. <i>Digital Government: Research and Practice</i> . 5 (3) - Times Cited Web of Science®: 1 - Times Cited Scopus: 2 - Times Cited Google Scholar: 7
4	Antunes, A. L., Barateiro, J., Marecos, V., Petrovi, J. & Cardoso, E. (2024). Ontology-based BIM-AMS integration in European highways. <i>Intelligent Systems with Applications</i> . 22 - Times Cited Web of Science®: 8 - Times Cited Scopus: 9 - Times Cited Google Scholar: 9
5	Martins, T., de Almeida, A., Cardoso, E. & Nunes, L. (2024). Explainable artificial intelligence (XAI): A systematic literature review on taxonomies and applications in finance. <i>IEEE Access</i> . 12, 618-629 - Times Cited Web of Science®: 26 - Times Cited Scopus: 34 - Times Cited Google Scholar: 69

6	Santos, D., Cardoso, E. & Alexandre, I. (2023). Evaluating the impact of gamification on the online shop of a game server: A Comparison between the Portuguese and North American contexts. <i>Informatics</i> . 10 (2) - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
7	Peixoto, A. R., Almeida, A. de., Antonio, N., Batista, F., Ribeiro, R. & Cardoso, E. (2023). Unlocking the power of Twitter communities for startups. <i>Applied Network Science</i> . 8 - Times Cited Web of Science®: 2 - Times Cited Google Scholar: 7
8	Cardoso, E. & Su, X. (2022). Designing a Business Intelligence and Analytics Maturity Model for higher education: A design science approach. <i>Applied Sciences</i> . 12 (9) - Times Cited Web of Science®: 24 - Times Cited Scopus: 24 - Times Cited Google Scholar: 68
9	Antunes, N., Ferreira, J. & Cardoso, E. (2022). Generating personalized business card designs from images. <i>Multimedia Tools and Applications</i> . 81 (18), 25051-2507 - Times Cited Google Scholar: 2
10	Su, X. & Cardoso, E. (2021). Measuring the maturity of the business intelligence and analytics initiative of a large Norwegian university. <i>International Journal of Business Intelligence Research</i> . 12 (2) - Times Cited Web of Science®: 8 - Times Cited Scopus: 8
11	Cardoso, E., Pedroso, T., Rações, F., Baptista, A. & Barateiro, J. (2018). Learning scorecard dashboards: visualizing student learning experience. <i>European Journal of Higher Education IT</i> . 2018 (1) - Times Cited Google Scholar: 2
12	Cardoso, E., Costa, D. & Santos, D. (2017). Introducing the Learning Scorecard: a tool to improve the student learning experience. <i>European Journal of Higher Education IT</i> . 2017 (1) - Times Cited Google Scholar: 8
13	Serrão, C. & Cardoso, E. (2017). Handling confidentiality and privacy on cloud-based health information systems. <i>Journal of Information Privacy and Security</i> . 13 (2), 51-68 - Times Cited Google Scholar: 3
14	Sousa, M. S., Major, M. J., Cardoso, E., Gonçalves, R. & Bento, R. (2017). Reformas no sistema Nacional de Saúde Britânico: o financiamento dos hospitais públicos e o papel da 'Performance Measurement and Management'. <i>Revista de Ciências Empresariais e Jurídicas</i> . 28, 47-71 - Times Cited Google Scholar: 2
15	Becker, C. & Cardoso, E. (2014). Report on the capability assessment and improvement workshop (CAIW) at iPres 2013. <i>D-Lib Magazine</i> . 20 (3/4) - Times Cited Scopus: 3 - Times Cited Google Scholar: 8
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17	Cardoso, E., Tzifa, E., Kaltabani, A., Demestichas, P., Silva, A. R. & Anagnostou, M. E. (1999). Service logic deployment and distribution configuration. <i>Lecture Notes in Computer Science</i> . 1597, 291-304 - Times Cited Google Scholar: 2

18	Olsen, A., Demany, D., Cardoso, E., Lodge, F., Kolberg, M., Björkander, M....Sinnott, R. (1999). The pros and cons of using SDL for creation of distributed services. <i>Lecture Notes in Computer Science</i> . 1597, 342-354 - Times Cited Web of Science®: 3 - Times Cited Scopus: 4 - Times Cited Google Scholar: 6
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- Scientific journal editor

1	Martins, H., Camilo, C., Souza, C., Cardoso, E., Bobrowicz-Campos, E., Ferreira, J....Lima, M. L. (2022). <i>Cadernos de Saúde Societal: Transformação Digital e Inclusão na Saúde</i> .
2	Lahoud, C., Cardoso, E. & Matta, N. (2020). <i>International Journal Continuing Engineering Education and Life-Long Learning</i> . Special Issue on: Knowledge Management Technologies in Education. Geneva. Inderscience Publishers.

- Editorial

1	Lahoud, C., Cardoso, E. & Matta, N. (2020). Introduction. <i>International Journal of Continuing Engineering Education and Life-Long Learning</i> . 30 (3), 219-222
2	Lahoud, I., Cardoso, E. & Matta, N. (2018). 3rd EKM Workshop Chairs' Welcome & Organization. 3rd EKM Workshop - WWW '18 Companion Proceedings of the The Web Conference 2018 . 1015-1017

- Review article

1	Lorvão Antunes, A. , Cardoso, E. & Barateiro, J. (2022). Incorporation of ontologies in data warehouse/business intelligence systems - A systematic literature review. <i>International Journal of Information Management Data Insights</i> . 2 (2) - Times Cited Web of Science®: 25 - Times Cited Scopus: 51 - Times Cited Google Scholar: 78
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• Books and Book Chapters

- Book author

1	Antunes, A., Barateiro, J., Mata, J., Tavares de Castro, A. & Cardoso, E. (2023). <i>Automatic Outlier Detection in Sensor Data Used for Structural Health Monitoring</i> . Lisboa. Laboratório Nacional de Engenharia Civil.
2	Antunes, A., Barateiro, J., Mata, J., Tavares de Castro, A., Caçador, F. & Cardoso, E. (2023). <i>Machine learning applied to sensor data. Predictive methods used for dam behavior interpretation</i> . Lisboa. Laboratório Nacional de Engenharia Civil.

- Book chapter

1	Nunes, L., Cardoso, E., de Almeida, A., Ribeiro, R., Guimarães, F., Mamede, R.P....Ferreira, J. (2023). <i>Inteligência artificial para a administração pública como experiência pedagógica</i> . In Joana Alexandre, Alexandre Almeida, Ana Espírito-Santo, Ana Lúcia Martins, Cecília Aguiar, Nádia Simões (Ed.), <i>Exemplos de práticas pedagógicas e estratégias de inovação pedagógica no Iscte</i> . (pp. 52-63). Lisboa: Iscte - Instituto Universitário de Lisboa.
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2	<p>Ferreira, R., Cardoso, E. & Oliveira, J. (2023). How can LMS affect student's motivation and engagement?. In Ruben Pereira, Isaias Bianchi, Álvaro Rocha (Ed.), Digital technologies and transformation in business, industry and organizations. (pp. 183-195). Cham: Springer .</p> <p>- Times Cited Scopus: 2 - Times Cited Google Scholar: 5</p>
3	<p>Rico, J., Barateiro, J., Mata, J., Antunes, A. & Cardoso, E. (2019). Applying advanced data analytics and machine learning to enhance the safety control of dams. In George A. Tsihrintzis, Maria Virvou, Evangelos Sakkopoulos, Lakhmi C. Jain (Ed.), Machine learning paradigms: Applications of learning and analytics in intelligent systems. Cham: Springer.</p> <p>- Times Cited Scopus: 26 - Times Cited Google Scholar: 34</p>
4	<p>Moura, J., Batista, F., Cardoso, E. & Nunes, L. (2015). Intelligent management and efficient operation of big data. In Noor Zaman, Mohamed Elhassan Seliaman, Mohd Fadzil Hassan, Fausto Pedro Garcia Marquez (Ed.), Handbook of research on trends and future directions in big data and web intelligence. (pp. 105-129): IGI Global.</p> <p>- Times Cited Google Scholar: 5</p>
5	<p>Cardoso, E. (2012). Business Intelligence e Gestão de Performance. In Nelson António (Ed.), Estratégia Organizacional: do mercado à ética. (pp. 167-200). Lisboa: Escolar Editora.</p>

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	<p>Trocin, C., Cardoso, E. & Mikalef, P. (2024). Algorithmic evaluations in breast cancer: The case of Champalimaud Foundation. In Maria Manuela Cruz-Cunha, Dulce Domingos, Emanuel Peres, Rui Rijo (Ed.), Procedia Computer Science. (pp. 1770-1777): Elsevier.</p>
2	<p>Maltusch, P., Cardoso, E., Kjærem, V., Langfeldt, O. I. & Kibsgaard, G. J. (2023). Using enterprise architecture for modeling and visualizing the impact of change: A report from the trenches. In Desnos, J.-F., and López Nores, M. (Ed.), Proceedings of European University Information Systems Congress 2023. EPIc Series in Computing. (pp. 140-150): EasyChair.</p>
3	<p>Oliveira, B., Henriques, A., Oliveira, Ó., Duarte, A., Santos, V., Antunes, A....Cardoso, E. (2023). A measure data catalog for dashboard management and validation. In Gusikhin, O., Hammoudi, S., and Cuzzocrea, A. (Ed.), Proceedings of the 12th International Conference on Data Science, Technology and Applications - DATA. (pp. 381-389). Rome, Italy: SciTePress.</p> <p>- Times Cited Google Scholar: 2</p>
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5	<p>Moreira, J. M., Pardelha, F., Laranjeira, C., Pereira, F., Novais, J., Lopes, P....Cardoso, E. (2022). Development of Plan S monitoring and compliance tool in the context of PTCRIS for Portuguese National Science Foundation. In Sicilia, M.-A., De-Castro, P., Vancauwenbergh, S., Simons, E., and Ognjen, O. (Ed.), Procedia Computer Science. (pp. 151-161). Dubrovnik: Elsevier.</p> <p>- Times Cited Web of Science®: 1 - Times Cited Scopus: 4 - Times Cited Google Scholar: 4</p>

6	<p>Vieira, S., Alexandre, I. M. & Cardoso, E. (2022). The child in charge: The case of child-participatory design of an environmental sustainability serious game. In IDC '22: Interaction Design and Children. (pp. 485-491). Braga: Association for Computing Machinery.</p> <p>- Times Cited Web of Science®: 5 - Times Cited Scopus: 9 - Times Cited Google Scholar: 7</p>
7	<p>Pedroso, T., Cardoso, E., Rações, F., Baptista, A. & Barateiro, J. (2019). Learning scorecard gamification: Application of the MDA framework. In Information Systems for Industry 4.0: Proceedings of the 18th Conference of the Portuguese Association for Information Systems. (pp. 29-46).: Springer International Publishing.</p> <p>- Times Cited Web of Science®: 4 - Times Cited Scopus: 7 - Times Cited Google Scholar: 13</p>
8	<p>Cardoso, E. & Su, X. (2019). Towards a lean assessment model for evaluating the maturity level of business intelligence and analytics initiatives in higher education. In EUNIS 2019 Congress, Proceedings. (pp. 33-36). Trondheim: European University Information Systems Organization.</p> <p>- Times Cited Google Scholar: 3</p>
9	<p>Cardoso, E. (2018). The past, present, and future of Learning Analytics. In Companion Proceedings of the The Web Conference 2018. (pp. 1021-1021). Lyon: ACM Press.</p> <p>- Times Cited Google Scholar: 2</p>
10	<p>Cardoso, E., Pedroso, T., Rações, F., Batista, A. & Barateiro, J. (2018). Learning Scorecard dashboards: visualizing student learning experience. In 24th International Conference of European University Information Systems, EUNIS2018. Paris</p>
11	<p>Antunes, A. L., Cardoso, E. & Barateiro, J. (2018). Adding value to sensor data of civil engineering structures: automatic outlier detection. In 1st Workshop on Machine Learning, Intelligent Systems and Statistical Analysis for Pattern Recognition in Real-life Scenarios, ML-ISAPR 2018. Zakynthos</p> <p>- Times Cited Scopus: 3 - Times Cited Google Scholar: 3</p>
12	<p>Pedroso, T., Cardoso, E., Rações, F., Batista, A. & Barateiro, J. (2018). Gamificação do learning scorecard: aplicação da framework MDA. In 18.ª Conferência da Associação Portuguesa de Sistemas de Informação (CAPSI'2018). Santarém</p>
13	<p>Cardoso, E., Costa, D. & Santos, D. (2017). Introducing the Learning Scorecard: a tool to improve the student learning experience. In 23rd International Conference of European University Information Systems (EUNIS 2017). (pp. 25-33). Münster: European University Information Systems.</p>
14	<p>Botelho, M. C., Vilar, E. T., Cardoso, E., Silva, A. A., Almeida, P. D., Rodrigues, L. M....Rodrigues, S. (2017). The four faces of information visualization: A conceptual framework for a postgraduate program. In Reis, L. P., Rocha, Á., Alturas, B., Costa, C., and Cota, M. P. (Ed.), 2017 12th Iberian Conference on Information Systems and Technologies (CISTI). Lisbon, Portugal: IEEE.</p> <p>- Times Cited Google Scholar: 1</p>
15	<p>Cardoso, E., Santos, D., Costa, D., Caçador, F., Antunes, A. & Ramos, R. (2017). Learning scorecard: monitor and foster student learning through gamification. In Ciancarini, P., Poggi, F., Horridge, M., Zhao, J., Groza, T., Suarez-Figueroa, M.C., d'Aquin, M., Presutti, V. (Ed.), Lecture Notes in Computer Science. (pp. 55-68).: Springer.</p> <p>- Times Cited Scopus: 1 - Times Cited Google Scholar: 14</p>

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17	<p>Cardoso, E. & Ribeiro, R. (2016). Looking back at the EUNIS repository data using text mining techniques. In Yiannis Salmatzidis (Ed.), EUNIS 2016: Crossroads where the past meets the future: EUNIS 22nd Annual Congress, Book of Proceedings. Thessaloniki</p>
18	<p>Oliveira, M., Cardoso, E. & Santana, M. (2015). Medição de usabilidade e eficiência de dashboards: Framework desenvolvida usando os princípios de desenho de business intelligence e interação homem-máquina. In O'Neill, H., Costa, C. J., Domingues, L., Alturas, B., and Serrão, C. (Ed.), Atas da 15ª Conferência da Associação Portuguesa de Sistemas de Informação (CAPSI 2015). (pp. 338-362). Lisboa: ISCTE - Instituto Universitário de Lisboa.</p>
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22	<p>Cardoso, E., Velada, R., José, S., Caetano, António & Costa, C. (2012). Reflexão sobre a implementação do processo de Bolonha no ISCTE-IUL. In Encontro Nacional Concretização do Processo de Bolonha em Portugal. (pp. 0-0). Castelo Branco, Portugal</p>
23	<p>Cardoso, E., Borges, H., Martinho, T., Cavaco, J. & Costa, C. (2012). IT service management using the ITIL® framework: the experience of ISCTE University Institute of Lisbon. In 18th International Conference of European University Information Systems (EUNIS 2012). (pp. 0-0). Vila Real, Portugal</p>
24	<p>Martins, R., Cardoso, E., Sequeira, M. M. de. & Borges, H. (2010). ITIL nas universidades: Projecto-piloto em gestão de activos de TI no ISCTE-IUL. In 10ª Conferência da Associação Portuguesa de Sistemas de Informação (CAPSI 2010). Viana do Castelo: Associação Portuguesa de Sistemas de Informação.</p> <p>- Times Cited Google Scholar: 3</p>
25	<p>Cardoso, E., Viaene, S. & Costa, C. (2009). Designing strategy maps for programme performance measurement in higher education. In 5th International Conference of European University Information Systems (EUNIS 2009). (pp. 0-0). Santiago de Compostela</p> <p>- Times Cited Google Scholar: 2</p>
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- Talk

1	Oliveira, B, Ana Henriques, Óscar Oliveira, Ana Duarte, Vasco Santos, Antunes, A....Cardoso, E. (2023). A Measure Data Catalog for Dashboard Management and Validation. 12th International Conference on Data Science, Technology and Applications - DATA2023.
2	Cardoso, E., Maltusch, P., Kjærem, V., Langfeldt, O. & Kibsgaard, G. (2023). Using Enterprise Architecture for Modeling and visualizing the impact of change: a report from the trenches. European University Information Systems Congress 2023.
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4	Cardoso, E. (2023). Estudo para o Conhecimento da Fraude nos Fundos Estruturais em Portugal . Estudo para o Conhecimento da Fraude nos Fundos Estruturais em Portugal – Divulgação Pública à Comunicação Social, 21 Setembro 2023, Procuradoria-Geral da República.
5	Moreira, J. M., Pardelha, F., Laranjeira, C., Pereira, F., Novais, J., Lopes, P....Cardoso, E. (2022). Desafios no desenvolvimento de uma ferramenta de monitorização e conformidade com políticas de Ciência Aberta no âmbito de financiamento pela FCT. 13ª Conferência Lusófona de Ciência Aberta.
6	Moreira, J. M. & Cardoso, E. (2022). A Ciência da Ciência: Sistema de Indicadores do Ecosistema C&T. Jornadas Computação Científica 2022.
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9	Cardoso, E. & Su, X. (2021). Becoming a data driven organization. NTNU Seminar: External experiences - digital solutions for governance and management (Eksterne erfaringer - digitale løsninger for styring og ledelse), September 16, 2021, NTNU.
10	Cardoso, E. (2021). LS 2.0: Visualizing student learning experience. AI in Higher Education (AI-HE 2021) supported by ERASMUS+ Project 2019-1-DK01-KA203-060293.
11	Cardoso, E. (2020). Business Intelligence and Analytics. DELix - Lisbon Winter School on Data Science and Engineering.
12	Cardoso, E. & Su, Xiaomeng (2020). The maturity assessment model for HEI in the making. EUNIS BI SIG Winter Seminar - Make data smart - a roadmap to the next level.

13	Cardoso, E. (2020). Next practice in making dashboards for HEI: challenges and opportunities. Next practice in making dashboards for HEIs – challenges and opportunities. EUNIS 2020 BI SIG workshop.
14	Cardoso, E. (2020). Assessing the maturity of Business Intelligence and Analytics in Higher Education. Metared Portugal. I Workshop dos grupos de trabalho, 31 Janeiro 2020, Universidade Nova de Lisboa, Lisboa.
15	Cardoso, E. & Su, Xiaomeng (2020). Presenting the HE-BIA Maturity Model v2.0: a lean assessment model of business intelligence and analytics initiatives in Higher Education . EUNIS 2020.
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17	Cardoso, E., Pedroso, T., Rações, F., Batista, A. & Barateiro, J. (2018). Learning Scorecard dashboards: visualizing student learning experience. 24th Int. Conf. on European University Information Systems (EUNIS2018).
18	Pateiro, T., Marques de Matos, D. & Cardoso, E. (2018). Visual analytics of Hebrew manuscripts codicological metadata. The 1st KDD Workshop on Data Science for Digital Art History: tackling big data Challenges, Algorithms, and Systems.
19	Marques de Matos, D., Pateiro, T. & Cardoso, E. (2018). Crossing the Line: Data visualisation of Codicological Data of Hebrew Manuscripts and Incunabula. XIth Congress of the European Association of Jewish Studies (EAJS, 2018).
20	Antunes, A.L., Cardoso, E. & Barateiro, J. (2018). Adding value to sensor data of civil engineering structures: Automatic outlier detection. 1st Workshop on Machine Learning, Intelligent Systems and Statistical Analysis for Pattern Recognition in Real-life Scenarios (ML-ISAPR 2018), organized in the 9th International Conference on Information, Intelligence, Systems and Applications (IISA 2018).
21	Cardoso, E. (2017). Case study: Gaming approaches at the University Institute of Lisbon. EUNIS Workshop A-Z of Learning Analytics.
22	Cardoso, E. (2017). How to become a data scientist in 3 (not so) easy steps. MSIAD: Workshop on Computational Data Science.
23	Botelho, M.C., Vilar, E., Cardoso, E., Alexandrino da Silva, A., Almeida, P., Rodrigues, L....Rodrigues, S. (2017). Information Visualisation quadrant display. A synergistic approach to a postgraduate program. Data Science, Statistics & Visualisation (DSSV 2017).
24	Cardoso, E., Costa, D. & Santos, D. (2017). Introducing the Learning Scorecard: a tool to improve the student learning experience. 23rd International Conference of European University Information Systems (EUNIS 2017).
25	Cardoso, E. (2016). Data visualization: new challenges. Curso de Especialização em Comunicação Visual de Informação - invited talk .
26	Cardoso, E. & Ribeiro, R. (2016). Looking back at the EUNIS repository data using text mining techniques. 22nd International Conference of European University Information Systems (EUNIS 2016).
27	Cardoso, E. (2016). Data Visualization Fundamentals for Business Intelligence. Master Class EUNIS Business Intelligence Task Force, Pre-conference event EUNIS 2016.

28	Cardoso, E., Santos, D., Costa, D., Caçador, F., Antunes, A. & Ramos, R. (2016). Learning Scorecard: monitor and foster student learning through gamification . 2nd Int. Workshop on Educational Knowledge Management (EKM 2016).
29	Cardoso, E. (2015). EUNIS Business Intelligence: Fatores chave para o desenvolvimento de iniciativas de BI no Ensino Superior. Conferência Business Intelligence nas Instituições de Ensino Superior Portuguesas, 23 Novembro 2015.
30	Cardoso, E. & Major, M. (2015). Apresentação de resultados no contexto científico. Seminário de Disseminação de Resultados do Projeto Healthcare Insight, 9 Novembro 2015.
31	Cardoso, E. (2015). Key Factors to Improve the Maturity of BI Initiatives in Higher Education. Jornada CRUE-TIC / EUNIS-BI sobre Inteligencia Institucional en Universidades.
32	Cardoso, E. (2014). Master class on Business Intelligence Systems. EUNIS Business Intelligence Task Force Event with Irish Universities, Dublin, 23 Maio 2014.
33	Cardoso, E. (2014). EUNIS BI Maturity Survey Report. 20th International Conference of European University Information Systems (EUNIS 2014), 11-13 Junho 2014 .
34	Cardoso, E. (2014). EUNIS Business intelligence. Jornadas Sectorial CRUE-TIC (Comisión sectorial de Tecnologías de la Información y las Comunicaciones de la Conferencia de Rectores de Universidades Españolas), 20-21 Novembro 2014.
35	Cardoso, E. (2014). The current state of business intelligence initiatives in European Higher Education Institutions. Terena Networking Conference 2014, 19-22 Maio 2014. - Times Cited Google Scholar: 4
36	Cardoso, E. (2014). Evaluation of the maturity level of BI initiatives in European Higher Education Institutions: survey results. EUNIS Business Intelligence Conference, 6-7 Março 2014.
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38	Cardoso, E., Alcolea, J.J., Rieger, B., Schulze, S., Rivera, M. & Leone, A. (2013). Evaluation of the maturity level of BI initiatives in European Higher Education Institutions: initial report from the BI Task Force @EUNIS. 19th International Conference of European University Information Systems (EUNIS 2013). - Times Cited Google Scholar: 5
39	Cardoso, E. (2013). Preliminary results of the survey on Capability Assessment and Improvement. Capability assessment and improvement workshop (CAIW) at IPRES 2013.
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41	Cardoso, E. & Nelson, L. (2013). Do You Know Where Your BI Initiative is Going? An Agile Business Intelligence Manifesto for Higher Education. Higher Education Data Warehousing Conference 2013 (HEDW2013).
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43	Cardoso, E., Borges, H., Martinho, T., Cavaco, J. & Costa, C. (2012). IT service management using the ITIL® framework: the experience of ISCTE University Institute of Lisbon. 18th International Conference of European University Information Systems (EUNIS 2012).
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45	Cardoso, E. (2011). Performance and quality management of Higher Education programmes. Seminários do Programa Doutoral de Gestão, ISCTE-IUL, 14 Dez. 2011.
46	Cardoso, E. & Trigueiros, M. (2007). Using the Balanced Scorecard as a tool for Performance Management of Higher Education Degrees. 13th International Conference of European University Information Systems (EUNIS 2007).
47	Trigueiros, M. & Cardoso, E. (2006). A methodology for the creation and restructuring Higher Education Degrees conformed to the Bologna goals – a practical case study. 12th International Conference of European University Information Systems (EUNIS 2006).
48	Alexandre, I., Trigueiros, M., Cardoso, E., Cercas, F. & Costa, C. (2005). DCTI a caminho de Bolonha. 6a Conferência da Associação Portuguesa de Sistemas de Informação (CAPSI 2005).
49	Cardoso, E. & Trigueiros, M. (2005). A Balanced Scorecard Approach for Strategy- and Quality-driven Universities. 11th International Conference of European University Information Systems (EUNIS 2005).
50	Cardoso, E. & Trigueiros, M. (2004). Decision support systems for university effectiveness. 10th International Conference of European University Information Systems (EUNIS 2004 - IT Innovation in a Changing World).
51	Trigueiros, M. & Cardoso, E. (2004). Sistemas de apoio à decisão para a eficácia da universidade. Conferência Anual de Utilizadores SAS (CAUS 2004).
52	Cardoso, E., Galhardas, H., Trigueiros, M. & Silva, A.R. (2003). A Decision Support System for IST Academic Information. 9th International Conference of European University Information Systems (EUNIS 2003).

- Conference paper not in proceedings

1	Alves, T., Cardoso, E., Oliveira, J., Saraiva, A., Cunha, C. & Costa, J. R. (2025). DAViD Lab: Liderando a Inovação em Digitalização e Visualização de Dados – Identidade e Propósito. XVI Encontro Anual de Parceiros do Roteiro das Minas e Pontos de Interesse Mineiro e Geológico de Portugal.
2	Alves, T., Saraiva, A., Cardoso, E., Oliveira, J., Cunha, C. & Costa, J. R. (2025). DAViD Lab: Inovação na Digitalização e Visualização Avançada de Dados – Missão, e Objetivos . 5ª Jornadas Open Source.
3	Moreira, J. M., Pardelha, F., Laranjeira, C., Pereira, F., Novais, J., Lopes, P....Cardoso, E. (2022). Development of Plan S monitoring and compliance tool in the context of PTCRIS for Portuguese National Science Foundation . 15th International Conference on Current Research Information Systems (CRIS2022).
4	Sacoor, H., Arsenio, E., Cardoso, E. & Barateiro, J. (2021). How to ensure the provision of social inclusive public transport bus services? a strategic case study in Lisbon. 49th European Transport Conference (ETC 2021). - Times Cited Google Scholar: 1

5	Cardoso, E. & Su, Xiaomeng (2020). Presenting the HE-BIA Maturity Model v2.0: a lean assessment model of business intelligence and analytics initiatives in Higher Education. 26th International Conference on European University Information Systems (EUNIS 2020). - Times Cited Google Scholar: 1
6	Pateiro, T., Marques de Matos, D. & Cardoso, E. (2018). Visual analytics of Hebrew manuscripts codicological metadata. 1st KDD Workshop on Data Science for Digital Art History: tackling big data Challenges, Algorithms, and Systems.
7	Botelho, M.C., Vilar, E., Cardoso, E., Alexandrino da Silva, A., Almeida, P., Rodrigues, L....Vital Brito, D (2018). Information visualization and health care communication: lessons from a postgraduate program. International Conference on Communication in Healthcare 2018. - Times Cited Google Scholar: 1

• Other Publications

- Other publications

1	Alves, T., Cardoso, E., Oliveira, J., Saraiva, A., Cunha, C. & Costa, J. R. (2025). Laboratório de Digitalização e Visualização Avançada de Dados. Ciência 2025.
2	Cardoso, E. (2020). Business Intelligence e a gestão de performance: Sebenta de Sistemas Informáticos de Apoio a Decisão II. Book.
3	Cardoso, E. & França, M. (2012). Qualidade Balanced Scorecard no planeamento estratégico de um hospital. IV Encontro de Profissionais de Gestão de Risco e Saúde Ocupacional em Estabelecimentos de Saúde.
4	Velada, R., Cardoso, E., Antunes, Ana, Caetano, António, Bento, Rui, Aguiar, Francisco...Sequeira, Manuel Menezes de (2009). Achievements of the Bologna process reforms: an integrated management and IT approach. 15th International Conference on European University Information Systems (EUNIS 2009). - Times Cited Google Scholar: 6
5	Cardoso, E. & Trigueiros, M. J. (2007). Using the balanced scorecard as a tool for performance management of higher education degrees. 13th International Conference of European University Information Systems (EUNIS 2007). - Times Cited Google Scholar: 4
6	Cardoso, E., Trigueiros, M. J. & Narciso, P. (2005). A balanced scorecard approach for strategy- and quality-driven universities. 11th International Conference of European University Information Systems (EUNIS 2005). - Times Cited Google Scholar: 17

- Report

1	Cardoso, E. (2023). Resumo do Estudo para o Conhecimento da Fraude nos Fundos Estruturais em Portugal.
2	Cardoso, E., Nunes, Luis, de Almeida, A. & Martins, T. (2023). Estudo para o Conhecimento da Fraude nos Fundos Estruturais em Portugal.

Research Projects

Project Title	Role in Project	Partners	Period
Interoperability and traceability of information on irregularities in European fund management systems in Portugal	Researcher	ISTAR-Iscte (SCM)	2025 - 2026
Sistemas de Informação e Análise de Dados para o Planeamento de Políticas Pública	Researcher	ISTAR-Iscte - Leader, INESC-ID - (Portugal), UAIG - (Portugal)	2025 - 2026
LABORATÓRIO DE DIGITALIZAÇÃO E VISUALIZAÇÃO AVANÇADA DE DADOS (DAVIDLab)	Global Coordinator	Iscte-CI - Leader, BRU-Iscte - Technical Coordinator, CEI-Iscte, CIES-Iscte, CIS-Iscte, DINAMIA'CET-Iscte - Technical Coordinator, CRIA-Iscte, IT-Iscte - Technical Coordinator, ISTAR-Iscte - Technical Coordinator, IMT - (Portugal), CML - (Portugal), ICOMOS-PT - (Portugal), EPHEMERA - (Portugal)	2025 - 2027
Expanding the European EHRxF to share and effectively use health data within the EHDS	Researcher	Iscte, BRU-Iscte, CIS-Iscte, CIES-Iscte, ISTAR-Iscte, NATIONAL EHEALTH AUTHORITY (Cyprus), BRIDG OU (Estonia), FOUNDATION FOR RESEARCH AND TECHNOLOGYHELLAS (Greece), IHE-EUR (Belgium), EICTA (Belgium), Cineca (Italy), TICSALUT (Spain), UPA (Spain), GNOMON (Greece), DNV (Norway), MEDIQ AS (Denmark), WIV (Belgium), EHTEL (Belgium), betse-health (Netherlands), DEPARTMENT OF HEALTH (Ireland), IDIKA S.A. (Greece), CDISC (Belgium), UNINOVA (Portugal), I~HD (Belgium), EUCROF EUROPEAN CRO FEDERATION (Netherlands), Charité - University Medicine Berlin (Germany), IEEE TECHNOLOGY CENTRE GMBH (Austria), SECRETARIA REGIONAL DA SAUDE (Portugal), MEDCOM (Denmark), TELEMEDICINE TECHNOLOGIES (France), DW (Italy), FGM (Italy), CVTT (Portugal), EMPIRICA (Germany), HL7 (Belgium), ECHALLIANCE COMPANY LIMITED BY GUARANTEE (Ireland)	2023 - 2026
Study for the knowledge of fraud in the structural funds in Portugal	Global Coordinator	CIES-Iscte, Nova SBE Data Science Knowledge Center - (Portugal)	2022 - 2023
Project Non-compliance Monitoring and Alert	Researcher	ISTAR-Iscte (SCM), CIES-Iscte	2022 - 2023
Artificial Intelligence in Incentive Management	Researcher	DINAMIA'CET-Iscte (GEC) - Leader, ISTAR-Iscte, BRU-Iscte, CIES-Iscte, AICEP - Portugal Global - (Portugal), IAPMEI - (Portugal)	2020 - 2021
Graduates Advancement and Development of University Capacities in Albania	Local Coordinator	CIES-Iscte, . - (Albania), . - (Albania), . - (Albania), . - (Albania), . - (Albania), . - (Albania), . - (Albania), . - (Italy), . - (Spain), . - (Portugal), . - (Albania), . - (Albania), . - (Italy), . - (Italy), European university - (Portugal)	2019 - 2020

Academic Management Positions

Coordenador do 2º Ano (2025 - 2028)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Director (2025 - 2028)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Coordenador do 1º Ano (2025 - 2028)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Membro (Docente) (2025 - 2027)
Unit/Area: Comissão Pedagógica

Coordenador do 1º Ano (2023 - 2025)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Director (2023 - 2025)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Coordenador do 2º Ano (2023 - 2025)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Director (2017 - 2019)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Director (2015 - 2017)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Coordenador do 1º Ano (2014 - 2016)
Unit/Area: Master Degree in Computer Engineering

Director (2013 - 2015)
Unit/Area: Master Degree in Integrated Business Intelligence Systems

Awards

EUNIS Doerup E-learning Award 2017 (2017)

Best Paper Award - 2nd International Workshop on Educational Knowledge Management (2016)

Research Networks

Research Network Name	Representative Role	Period
Artificial Intelligence Competence Center for Public Administration (IA-AP)	Member	Since 2021

Professional Associations

Data Visualization Society (Since 2022)

Society for Learning Analytics Research (SOLAR) (Since 2020)

IEEE (Since 2018)

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Coordination of scientific event (with scientific committee) at ISCTE-IUL	Workshop Fraud and European Funds	ISCTE-IUL (Projeto Estudo para o conhecimento da fraude nos fundos estruturais em Portugal)	2022
Member of non-scientific event's organizing committee	Strategisk analyse av NTNUs evner og muligheter - Virksomhetsarkitektur og kapabilitetsmodell som metode for strategisk analyse (Strategic analysis of NTNU's capabilities and opportunities - Enterprise architecture and capability model as a method for strategic analysis) - Workshop 2	NTNU, Aalto University, ISCTE-IUL	2022
Member of non-scientific event's organizing committee	Strategisk analyse av NTNUs evner og muligheter - Virksomhetsarkitektur og kapabilitetsmodell som metode for strategisk analyse (Strategic analysis of NTNU's capabilities and opportunities - Enterprise architecture and capability model as a method for strategic analysis) - Workshop 1	NTNU, Aalto University, ISCTE-IUL	2022
Member of non-scientific event's organizing committee	EUNIS EA and BI SIG Spring Seminar: Modeling for strategic decision making - Explore how to combine enterprise architecture (EA) and business intelligence (BI) to improve strategic decision making in higher education institutions (HEI), Tampere University, Finland	EUNIS Enterprise Architecture and Business Intelligence Special Interest Groups	2022
Member of non-scientific event's organizing committee	Final Conference of the GRADUA project, Dissemination Event and Project Meeting, Tirana, Albania	GRADUA Project (Erasmus+ project No. 585961-EPP-1-2017-1-AL-EPPKA2-CBHE-SP (2017 - 2926/001 -001)	2021
Member of non-scientific event's organizing committee	NTNU Business Intelligence and Analytics (BIA) Roadmapping Workshop	Norwegian University of Science and Technology (NTNU)	2021
Member of scientific event's organizing committee	The times they are changing - Doing BI and analytics during a pandemic (BI SIG pre-congress EUNIS 2021 workshop)	EUNIS BI SIG (EUNIS Business Intelligence Special Interest Group)	2021
Member of scientific event's organizing committee	Next practice in making dashboards for HEIs - challenges and opportunities. EUNIS 2020 BI SIG workshop.	EUNIS BI SIG (EUNIS Business Intelligence Special Interest Group)	2020
Member of non-scientific event's organizing committee	Educational dashboards - show case from Higher Educational Institutions. EUNIS 2020 Pre-congress seminar	EUNIS BI SIG (EUNIS Business Intelligence Special Interest Group)	2020
Member of non-scientific event's organizing committee	Management dashboards - show cases from Higher Educational Institutions. EUNIS 2020 Pre-congress seminar	EUNIS BI SIG (EUNIS Business Intelligence Special Interest Group)	2020

Member of non-scientific event's organizing committee	Make data smart - a roadmap to the next level - EUNIS BI SIG winter seminar, 3-4 Feb. Ghent, Belgium	EUNIS BI SIG (EUNIS Business Intelligence Special Interest Group)	2020
Coordination of non-scientific event	Workshop: Designing student dashboards (part 1 and part 2). 6h hands-on workshop for Higher Education professionals, integrated in the EUNIS Learning Analytics Workshop, Helsinki, Finland	EUNIS Business Intelligence Task Force	2018
Coordination of non-scientific event	EUNIS Learning Analytics Workshop: using data to enhance learning and teaching Aalto University Foundation, Helsinki, Finland 11-12 October 2018	EUNIS: Business Intelligence and Learning and Teaching Task Forces	2018
Member of non-scientific event's organizing committee	DELIX 2018 Lisbon Winter School on Data Science and Engineering. 15-17 February 2018, Instituto Superior Técnico, Universidade de Lisboa	IDSS Lab of INESC-ID and IDC	2018
Member of scientific event committee	EUNIS 2013		2013
Member of scientific event's organizing committee	8th Int. Conf. on the Quality of Information and Communications Technology (QUATIC 2012)		2012
Member of scientific event committee	18th European University Information Systems Congress (EUNIS2012)		2012
Member of scientific event committee	9th Annual QUASAR Workshop, Centro de Informática e Tecnologias da Informação, Univ. Nova de Lisboa		2012

Diffusion Activities

Activity Type	Event Title	Activity Description	Year
Publication in general diffusion news outlet	Radio program "Crosswords", Antena 2, "The COVID charts - with the pandemic, data visualization has invaded the news" Episode 113	Radio program "Crosswords", Antena 2, "The COVID charts - with the pandemic, data visualization has invaded the news" Episode 113, on June 8, 2022	2022
Publication in general diffusion news outlet	Radio program "Crosswords", Antena 2, "The expression 'as shown in the graph...' - how often are graphs used as proof of a text" Episode 115	Radio program "Crosswords", Antena 2, "The expression 'as shown in the graph...' - how often are graphs used as proof of a text" Episode 115, on June 10, 2022	2022
Publication in general diffusion news outlet	Radio program "Crosswords", Antena 2, "Good tips for data visualization - how to make good graphics to show data" Episode 112	Radio program "Crosswords", Antena 2, "Good tips for data visualization - how to make good graphics to show data" Episode 112, on June 7, 2022	2022
Publication in general diffusion news outlet	Radio program "Crosswords", Antena 2, "Fake Graphics - just as there is fake news, there are also fake graphics" Episode 114	Radio program "Crosswords", Antena 2, "Fake Graphics - just as there is fake news, there are also fake graphics" Episode 114, on June 9, 2022	2022

Publication in general diffusion news outlet	Radio program "Crosswords", Antena 2, "Data visualization - using graphics to expose a lot of information." Episode 111	Radio program "Crosswords", Antena 2, "Data visualization - using graphics to expose a lot of information." Episode 111, on June 6, 2022	2022
Coordination of knowledge diffusion event	Alberto Cairo: Visual Trumpery Tour @Lisbon	Open lecture by Alberto Cairo (University of Miami) on Visual Trumpery: How charts lie - and how they make us smarter (10-Dec-2018, ISCTE-IUL Grand Auditorium). The English word "trumpery" means meaningless nonsense, something that is flashy and misleading at the same time. Trumpery can occur in the text, verbally or visually. The lecture addresses examples of misleading graphics and data maps, with the purpose of increasing visual literacy.	2018

Scientific Editing/Reviewing Activities

Type of Activity	Journal Title	ISSN/Quartile	Period	Language
Scientific journal editor	Digital Health for Better Health and Life	2079-8954 / Q2	2022 - 2023	English
Scientific journal editor	Cadernos de Saúde Societal: Transformação Digital e Inclusão na Saúde nº3	2184-9676	2022	Portuguese
Scientific journal editor	International Journal Continuing Engineering Education and Life-Long Learning. Special Issue on: Knowledge Management Technologies in Education	1741-5055 / Q3	2020	English