

Dora Melo

Dora Melo is an accomplished computer scientist with a strong academic background. She completed her PhD in Computer Science from the University of Évora in June 2014. Her research focused on Knowledge Representation and Reasoning, Ontologies, Natural Language Processing, Semantic Web, Dialogues, Question-Answering Systems, Information Retrieval, Information Extraction, Data Science, and Artificial Intelligence in Public Administration. Prior to her PhD, Dora earned a Master's degree in Informatics from the University of Porto in December 2006. Her master's research was conducted at the Department of Computer Science, and she gained expertise in areas such as Metadata, Inference, Machine Learning, and Decision Support Systems. She also holds a Bachelor's degree in Mathematics from the University of Coimbra, which she obtained in September 1997. During her undergraduate studies, she developed a solid foundation in mathematical concepts and principles.

Currently serving as an Adjunct Professor at the Polytechnic Institute of Coimbra, Coimbra Business School | ISCAC, with more than 25 years of extensive teaching experience, imparting her knowledge and expertise in computer science to students, guiding and mentoring them in their academic pursuits.

As a researcher, Dora has been collaborating with NOVA LINCS and recently with CEOS.PP-ISCAC research centres. Her scientific contribution is evidenced by the publication of 15 articles in specialised journals, the authorship of 3 book chapters, and her involvement in 2 research projects as a researcher. Her work and research interests main focus include Knowledge Representation and Reasoning, Ontologies, Natural Language Processing, Semantic Web, Dialogues, Question-Answering Systems, Information Retrieval, Information Extraction, Data Science and Artificial Intelligence in Public Administration, Archives, Metadata, Inference, Machine Learning, and Decision Support Systems.

Identification

Personal identification

Full name
Dora Melo

Citation names

Melo, Dora
Melo, D.

Author identifiers

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Knowledge fields

Exact Sciences - Computer and Information Sciences

Languages

Language	Speaking	Reading	Writing	Listening	Peer-review
Portuguese (Mother tongue)					
English	Upper intermediate (B2)	Advanced (C1)	Advanced (C1)	Advanced (C1)	Advanced (C1)

Education

	Degree	Classification
2009/10 - 2014/06/11 Concluded	PhD in Computer Science (Informatics) (Doutoramento) Major in Computer Sciences (Informatics) Universidade de Évora Departamento de Informática, Portugal <i>"Sistemas de Pergunta-Resposta para a Web semântica (Question-Answering Systems for the Semantic Web)" (THESIS/DISSERTATION)</i>	Approved with Summa Cum Laude
2002 - 2006/12/11 Concluded	Computer Sciences (Informatics) (Mestrado) Major in Computer Sciences Universidade do Porto Departamento de Ciência de Computadores, Portugal <i>"Ferramentas para determinação e avaliação de soluções em problemas de horários" (THESIS/DISSERTATION)</i>	Excellent unanimously
1991/09/01 - 1997/09 Concluded	Mathematics (Licenciatura) Major in Scientific Field - Computer Science specialisation Universidade de Coimbra Departamento de Matemática, Portugal	

Affiliation

Teaching in Higher Education

	Category Host institution/organization	Employer
2018 - Current	Adjunct Teacher (Polytechnic Teacher) Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal	Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal

2016 - 2018	Adjunct Teacher (Polytechnic Teacher)	Instituto Politécnico de Coimbra, Portugal
2014 - 2016	Adjunct Teacher (Polytechnic Teacher)	Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal
2013 - 2014	Assistant (Polytechnic Teacher)	Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal
1998/02/02 - 2013	Invited Assistant (Polytechnic Teacher)	Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal

Positions / Appointments

	Category Host institution/organization	Employer
2018 - 2019	Conselho científico/técnico-científico ou órgão correspondente	Instituto Politécnico de Coimbra, Portugal
2018 - 2019	Coordenação ou direção de centro de investigação, departamento ou equivalente Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal	Instituto Politécnico de Coimbra, Portugal

Projects

Contract

	Designation	Funders
2021/03 - 2023/04	GOLEM - Automated Programming to Revolutionize App Development Lisboa-01-0247-Feder-045917 Researcher Universidade Nova de Lisboa Laboratório para a Ciência da Computação e Informática, Portugal	European Regional Development Fund, Belgium Agência Nacional de Inovação SA, Portugal Fundação para a

Agência Nacional de Inovação SA, Portugal
 Fundação para a Ciência e a Tecnologia, Portugal
 Carnegie-Mellon, United States

Ciência e a
 Tecnologia,
 Portugal
 Carnegie-Mellon,
 United States
 Concluded

2020/01/01 - 2021/12/31

Application of Artificial Intelligence and Natural Language
 Processing Methodologies in the Triage, Counselling and
 Referral Service of SNS 24
 DSAIPA/AI/0040/2019

Fundação para a
 Ciência e a
 Tecnologia,
 Portugal

Concluded

Universidade de Évora, Portugal
 Universidade de Évora Laboratório de Informática Sistemas
 e Paralelismo, Portugal

2019/01/01 - 2021/12/31

EPISA - Entity and Property Inference for Semantic Archives
[DSAIPA/DS/0023/2018](#)

Fundação para a
 Ciência e a
 Tecnologia,
 Portugal

Researcher

Concluded

Instituto de Engenharia de Sistemas e Computadores
 Tecnologia e Ciência, Portugal
 Direção-Geral do Livro dos Arquivos e das Bibliotecas,
 Portugal
 Universidade de Évora Laboratório de Informática Sistemas
 e Paralelismo, Portugal

Outputs

Publications

- | | | |
|--------------|---|--|
| Book chapter | 1 | Davide Varagnolo; Dora Melo; Irene Pimenta Rodrigues. "Partial DRS, an Intermediate Representation, to Generate SPARQL Queries from NL Questions". In <i>Linking Theory and Practice of Digital Libraries</i> , 95-105. 2024.
Published · 10.1007/978-3-031-72440-4_9 |
| | 2 | Varagnolo, Davide; Melo, D.; Rodrigues, Irene Pimenta; Rodrigues, Rui; Couto, Paula. Corresponding author: Melo, D.. "Archives Metadata Text Information Extraction into CIDOC-CRM". In <i>Knowledge Discovery, Knowledge Engineering and Knowledge Management. IC3K 2022. Communications in Computer and Information Science</i> , 195-216. Springer Nature Switzerland, 2023.
Published · 10.1007/978-3-031-43471-6_9 |
| | 3 | Melo, D.; Rodrigues, Irene Pimenta; Nogueira, Vitor Beires. Corresponding author: Melo, D.. "Semantic Web Search Through Natural Language Dialogues". In <i>Innovations, Developments, and Applications of Semantic Web and Information Systems</i> , 329-349. United States: IGI Global, 2018.
Published · 10.4018/978-1-5225-5042-6.ch012 |
| | 4 | Melo, D.; Rodrigues, Irene Pimenta; Nogueira, Vitor Beires. "Using a Dialogue Manager to Improve Semantic Web Search". In <i>Information Retrieval and Management</i> , 1166-1183. IGI Global, 2018.
Published · 10.4018/978-1-5225-5191-1.ch050 |

- Conference paper
- 1 Melo, Dora; Maria Isabel Clímaco; Ana Paula Quelhas; Larguinho, Manuela. Corresponding author: Melo, Dora. "Profiling Financial Knowledge in a Portuguese Population: A Machine Learning Approach". Paper presented in *ICMarkTech'24, Ponta Delgada, 2024*.
 - 2 Davide Varagnolo; Dora Melo; Irene Rodrigues. "A Methodology for Interpreting Natural Language Questions and Translating into SPARQL Query over DBpedia". Paper presented in *16th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management - KEOD, Porto, 2024*.
Published · 10.5220/0012940800003838
 - 3 Melo, Dora; Rodrigues, Irene Pimenta; Ferreira, Lúcia. "Portuguese Archives Handwritten text recognition of passport requisitions". Paper presented in *2nd International Workshop on Mathematics and Physical Sciences, Évora, 2024*.
Published
 - 4 Varagnolo, Davide; Melo, D.; Rodrigues, Irene. "An Ontology-Based Question-Answering, from Natural Language to SPARQL Query". Paper presented in *15th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, 2023*.
Published · 10.5220/0012180000003598
 - 5 Varagnolo, Davide; Antas, Guilherme; Ramos, Mariana; Amaral, Sara; Melo, Dora; Rodrigues, Irene; Varagnolo, D.; et al. Corresponding author: Melo, Dora. "Evaluating and Exploring Text Fields Information Extraction into CIDOC-CRM". Paper presented in *14th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, 2022*.
Published · 10.5220/0011550700003335
 - 6 Varagnolo, D.; Rodrigues, C.; Martins, A.; Melo, Dora; Rodrigues, I.P.. "Extracting entities and events from archives textual metadata". Paper presented in *Linked Archives International Workshop 2021, co-located with 25th International Conference on Theory and Practice of Digital Libraries (TPDL 2021), 2021*.
Published
 - 7 Silva, João; Melo, Dora; Rodrigues, Irene; Seco, João; Ferreira, Carla; Parreira, Joana; Silva, J.Q.; et al. Corresponding author: Melo, Dora. "An Ontology based Task Oriented Dialogue". Paper presented in *13th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, 2021*.
Published · 10.5220/0010711900003064
 - 8 Melo, D.; Rodrigues, I.P.; Koch, I.. "Knowledge Discovery from ISAD, Digital Archive Data, into Archonto, a CIDOC-CRM based Linked Model". Paper presented in *Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (KEOD), 2020*.
Published · 10.5220/0010134101970204
 - 9 Melo, D.; Rodrigues, Irene Pimenta; Nogueira, Vitor Beires. Corresponding author: Melo, D.. "Using a dialogue manager to improve search in the semantic web". Paper presented in *INForum 2014 – 6.º Simpósio de Informática, 2014*.
Published
 - 10 Melo, D.; Rodrigues, Irene; Nogueira, Vitor. Corresponding author: Melo, D.. "Um sistema de pergunta-resposta para ontologias OWL". Paper presented in *INForum 2012 – 4.º Simpósio de Informática, 2012*.
Published

- 11 Melo, D.; Rodrigues, I.P.; Nogueira, V.B.; Melo, D.; Rodrigues, Irene Pimenta; Nogueira, Vitor. "Cooperative Question Answering for the Semantic Web". Paper presented in *International Conference on Knowledge Management and Information Sharing*, 2011.
Published · 10.5220/0003691202580263
- 12 Melo, D.; Pimenta Rodrigues, Irene; Beires Nogueira, Vitor. "A Review on Cooperative Question-Answering Systems". Paper presented in *3rd Computer Workshops of University of Évora - JIUE'2011*, 2011.
Published

Journal article

- 1 Davide Varagnolo; Dora Melo; Irene Pimenta Rodrigues. "Translating Natural Language questions into CIDOC-CRM SPARQL queries to access Cultural Heritage knowledge bases". *Journal on Computing and Cultural Heritage* (2025): <https://doi.org/10.1145/3715156>.
10.1145/3715156
- 2 Melo, D.; Irene Pimenta Rodrigues; Davide Varagnolo. "A strategy for archives metadata representation on CIDOC-CRM and knowledge discovery". *Semantic Web* 14 3 (2023): 553-584. <http://dx.doi.org/10.3233/sw-222798>.
Published · Open access · 10.3233/sw-222798
- 3 Silva, João Quirino; Melo, Dora; Rodrigues, Irene Pimenta; Seco, João Costa; Ferreira, Carla; Parreira, Joana. "An Ontology-Based Task-Oriented Dialogue to Create OutSystems Applications". *SN Computer Science* 4 1 (2023): <http://dx.doi.org/10.1007/s42979-022-01418-0>.
Published · 10.1007/s42979-022-01418-0
- 4 Varagnolo, Davide; Melo, D.; Rodrigues, Irene Pimenta. "A Tool to Explore the Population of a CIDOC-CRM Ontology". *Procedia Computer Science* 192 (2021): 158-167. <http://dx.doi.org/10.1016/j.procs.2021.08.017>.
Published · 10.1016/j.procs.2021.08.017
- 5 Melo, Dora; Rodrigues, I.P.; Nogueira, V.B.. "Using a dialogue manager to improve semantic web search". *International Journal on Semantic Web and Information Systems* 12 1 (2016): 62-78.
Published · 10.4018/IJSWIS.2016010104
- 6 Melo, D.; Rodrigues, Irene Pimenta; Nogueira, Vitor Beires. "Work Out the Semantic Web Search: The Cooperative Way". *Advances in Artificial Intelligence* 2012 (2012): 1-9. <http://dx.doi.org/10.1155/2012/867831>.
10.1155/2012/867831
- 7 Melo, D.; Pimenta Rodrigues, Irene; Beires Nogueira, Vitor; Rodrigues, Irene Pimenta; Nogueira, Vitor. "Puzzle Out the Semantic Web Search". *International Journal of Computational Linguistics and Applications* 3 1 (2012): 91-106. <http://www.gelbukh.com/ijcla/2012-1/IJCLA-2012-1.pdf>.
Published · Open access

Thesis /
Dissertation

- 1 Melo, Dora. "Sistemas de Pergunta-Resposta para a Web Semântica". PhD, Universidade de Évora Departamento de Informática, 2014. <https://renates2.dgeec.mec.pt/ppsqdet.asp>.

Activities

Supervision

	Thesis Title Role	Degree Subject (Type) Institution / Organization
2024/10 - Current	Power BI (Power Platform): Sistemas de apoio à decisão na gestão do negócio Supervisor	Master degree in Data Analysis and Decision Support Systems (Master) Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal
2023/11 - Current	Authorship Identification of Texts based on Natural Language Processing and Machine Learning Supervisor	Master degree in Data Analysis and Decision Support Systems (Master) Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal
2022/10/01 - Current	Ontology-based natural language interpretation for Information extraction and query answering Co-supervisor	Computer Sciences (Informatics) (PhD) Universidade de Évora Departamento de Informática, Portugal
2022/10/01 - Current	Representation Models for Cultural Heritage Co-supervisor	Computer Sciences (Informatics) (PhD) Universidade de Évora Departamento de Informática, Portugal
2023/09 - 2024/12/02	Transformação Digital na Indústria Farmacêutica: Monitorização da Gestão de Vendas e Stocks Co-supervisor	Master degree in Data Analysis and Decision Support Systems (Master) Instituto Politécnico de Coimbra Instituto Superior de Contabilidade e Administração de Coimbra, Portugal

Distinctions

Award

2024	Best Poster Award at 16th International Conference on Knowledge Engineering and Ontology Development (KEOD/IC3K) Instituto Para Os Sistemas e Tecnologias de Informação Controlo e Comunicação, Portugal
2021	Best Paper Award of the 13th International Conference on Knowledge Engineering and Ontology Development (KEOD/IC3K) Instituto Para Os Sistemas e Tecnologias de Informação Controlo e Comunicação, Portugal