# Proceedings of the 23rd European Conference on e-Learning

**ECEL 2024** 

A Conference
Hosted By

Universidade Portucalense, Porto, Portugal

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Edited by Professor Fernando Moriera

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# About the 23rd European Conference on e-Learning, 2024

The European Conference on e-Learning (ECEL) is a prominent academic conference that serves as a platform for researchers, educators, and practitioners in the field of e-learning to share and discuss their findings and insights. With a history spanning 23 years, the conference has established itself as a vital forum for exploring advancements and innovations in e-learning.

The Proceedings of the 23<sup>rd</sup> European Conference on e-Learning, 2024 includes academic research papers, PhD research papers, Master's Research papers and work-in-progress papers, which have been presented and discussed at the ECEL 2024 conference. The proceedings are of an academic level appropriate to a professional research audience including graduates, post graduates, doctoral and post-doctoral researchers. All papers have been double-blind peer reviewed by members of the Review Committee.

#### **Aims and Scope**

The primary aim of ECEL is to foster collaboration and knowledge exchange among those involved in e-learning. It seeks to advance the field by providing a space where latest research, technologies, and pedagogical strategies can be presented. The conference encourages participation from a diverse group of attendees, including academics, industry experts, and policy-makers, reflecting the multifaceted nature of e-learning.

#### **Topics Covered**

The call for papers for the ECEL conference asked for contributions that considered the following topic. In addition, the committee welcomed papers on a number of specialist mini-tracks which can be seen at the end of this list.

- Educational Technologies: Innovations in digital tools and platforms designed to enhance learning experiences.
- **Blended Learning:** Strategies for effective teaching and learning in online and hybrid environments.
- **Distance Education**: Best practices and challenges in implementing distance learning programs.
- **Learning Analytics**: Use of data to improve educational outcomes and personalize learning experiences.
- Inclusive Education: Addressing accessibility and inclusivity in e-learning environments.
- Mobile Learning: Exploring the impact of mobile technology on education.
- **Game-Based Learning**: Integration of games and gamification in educational contexts to encourage engagement and motivation.

Experts in the field proposed mini tracks on the following topics. Papers accepted on these topics after the double-blind peer review process were presented as mini tracks at the conference and are also published in these proceedings.

- Technology in Teaching and Learning
- Intelligent Adaptive e-Learning

The programme from the 2024 conference can be downloaded from <a href="here">here</a> and full details about the conference can be seen from the conference website: <a href="https://www.academic-conferences.org/conferences/ecel/">https://www.academic-conferences.org/conferences/ecel/</a>

### **ECEL Preface**

These proceedings represent the work of contributors to the 23rd European Conference on e-Learning (ECEL 2024), hosted by ACI and the Universidade Portucalense, Porto, Portugal on 24-25 October 2024. The Conference Chair was Professor Fernando Moriera, and the Programme Chair was Shital Jayantilal, both from Universidade Portucalense.

ECEL is a well-established event on the academic research calendar and in its 23rd year the key aim remains the opportunity for participants to share ideas and meet the people who hold them. The subjects covered illustrate the wide range of topics that fall into this important and ever-growing area of research.

The opening keynote presentation was given by Professor António Teixeira from the Universidade Aberta, who spoke about *Openness, Flexibility, Adaptability and Personalisation: How AI is Impacting Digital Education* and Professor Marta Mena from The National University of Tres de Febrero-UNTREF Argentina gave a keynote discussing *When Virtualization and Hybridization Causes Challenges for Teaching at University.* The final keynote address was given by Professor Cesar Alberto Collazos from University of Cauca-Colombia on the topic of *Collaborative Games as A Mechanism Supporting Monitoring and Evaluation of Collaborative Learning Processes.* 

With an initial submission of 111 abstracts, after the double blind, peer review process there are 56 Academic research papers, 3 PhD research papers, 1 Masters Research paper, 1 non-academic paper and 6 work-in-progress papers published in these Conference Proceedings. These papers represent research from Algeria, Australia, Austria, Belgium, Bhutan, Canada, China, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hong Kong, China, Hungary, Ireland, Japan, Morocco, Norway, Oman, Pakistan, Chile, Portugal, Singapore, Slovakia, South Africa, Spain, Sri Lanka, Sweden, United Arab Emirates, UK and USA.

We would like to thank everyone who participated in this conference.

Professor Fernando Moriera and Professor Shital Jayantilal Universidade Portucalense Porto Portugal

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# **Conference and Programme Chairs**



**Professor Fernando Moreira** has been a member of the Science and Technology Department at Portucalense University since 1992, currently as a Full Professor, and a visiting professor at the University of Porto Business School. He was the head of the Science and Technology Department from May 2018 until February 2022. He is graduated in Computer Science (1992), M.Sc.

in Electronic Engineering (1997) and PhD in Electronic Engineering (2003), both at the Faculty of Engineering of the University of Porto and Habilitation (2018). He teaches subjects related to undergraduate and post-graduate studies. He supervises several PhD and M.Sc. students. He is a (co-)author of more than 200 scientific publications with peer-review on national and international journals and conferences. He serves as a member of the Editorial Advisory Board for several journals and books. He organized several special issues from JCR journals. He has already regularly served as a member of Programme and Scientific committees of national and international conferences. He was the MSc in Computation coordinator during the last ten years. He holds editorial experience, and he is co-editor of several books. He is associated with NSTICC, ACM and IEEE. His principal research areas are mobile computing, ICT in Higher Education, Mobile learning, Social business and Digital transformation. He was awarded Atlas Elsevier Award in April 2019



**Shital Jayantilal** is the Head of the Department of Economics and Management at Portucalence University. She lectures under graduate and graduate courses in Strategy and Strategic Management. She has a PhD in Business Studies from Extermadura University (2016) and a degree in Economics from the Faculty of

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#### **Keynote Speakers**



**António M. Teixeira** is Associate Professor of open, distance and network education at the Universidade Aberta where he has been Pro-Rector for Innovation in Distance Education and chaired the Department of Distance Education and e-Learning. He is a researcher at the Laboratory of Distance

Education and e-Learning and at the Centre for Philosophy at the University of Lisbon. He has been on several boards of directors and many expert committees at national and international level. He's currently an external expert at AQU Catalunya and ACPUA quality assurance agencies and the research and innovation national agency of Uruguay (ANII) among others. António M. Teixeira has participated in many international research projects and authored a number of scientific articles and publications. His main research interest is educational innovation and learning futures; open education, particularly MOOCs; distance

learning and educational ethics. He has been part of the MOOC movement for some time coauthoring the first institutional pedagogical model dedicated to massive open education – the iMOOC. He has also co-designed the sMOOC pedagogical model.



**Marta Mena** is currently a Professor at the National University of Tres de Febrero-UNTREF Argentina. She is a director of the Virtual Training Program for Researchers-PROFORVIN at the National Technological University-UTN-Argentina, an Advisor at the National University of San Luis for the development

of the Hybrid Classrooms Project and the Current Ambassador for Latin America at the International Council for Distance Education (ICDE) and member of the editorial board of Open magazine Praxis. Professor Mena received the Award of Excellence from the International Council for Open and Distance Education in November 2023. She has written countless articles and books about modality in Latin America.



**Cesar Alberto Collazos** received the Ph.D. degree in computer science in 2004. He is currently a Professor at the Systems Department, Faculty of Electronic Engineering and Telecommunications, University of Cauca-Colombia. Coordinator of IDIS Research Group and also a Coordinator of the HCI-Collab

Network: Collaborative Network Supportung HCI education on Iberoamerican countries. His areas of interest focus on human—computer interaction, collaborative systems, ICT, and education. Has published a lot of papers in recognized conferences and journals.

#### **Mini Track Chairs**



**Prof. Dr. Abbas Fadhil Aljuboori** is working currently at Media Technology Engineering, College of Engineering, University of Information Technology and Communications, Iraq. He has a Ph.D. in Computer Science from Dongguk University, SOUTH KOREA. Fulbright Visiting scholar — University of Central Oklahoma — Edmond — USA —2017. International Advisory Board Member for

CT University in India. His field of Interest are in Data Mining, Web Applications, Big Data, Data Security, Information Systems, Social Media Analysis, and Smart Applications. He is a Member of several of Academic and Professional Societies. He is an Editor-in-Chief, Editorial Board Member and Reviewer of many eminent International Journals and Conferences worldwide.



Ana Paula Lopes is Professor at the Mathematics Department of the Porto Accounting and Business School (ISCAP) of the Polytechnic Institute of Porto (P.PORTO), Portugal, since 2000. She has a PhD in Mathematics (2006), in the field of Numerical Linear Algebra. She is author and co-author of several peer-

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