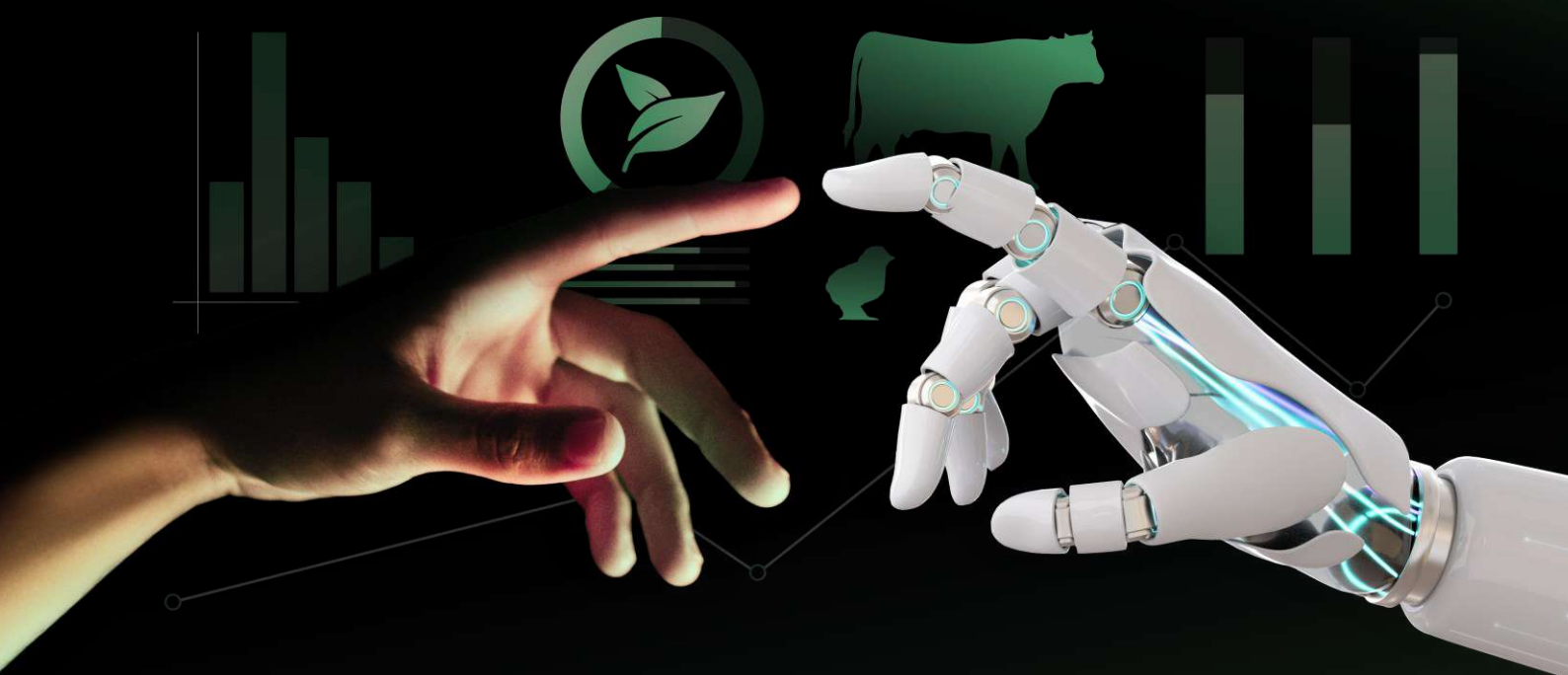


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International Seminar on the Utilization of **AI** in **Teaching** and **Research** in **Agricultural Sciences**

University of Trás-os-Montes e Alto Douro

Vila Real



Projeto inserido no Investimento Impulso Mais Digital 10/ C06-i07/2024 – Reforma e Modernização das Ciências Agrárias, no âmbito do Plano de Recuperação e Resiliência (PRR)

Seminar Overview

The International Seminar on the Utilization of Artificial Intelligence (AI) in Teaching and Research in Agricultural Sciences will bring together experts, educators, researchers, and students from around the world to explore how AI can revolutionize education and research in agricultural sciences. This seminar will focus on the application of AI technologies in enhancing teaching methods, improving research outcomes, and addressing challenges faced by the agricultural sector globally. The seminar will feature keynote speakers, panel discussions, and hands-on workshops designed to facilitate the exchange of ideas, foster collaboration, and develop practical strategies for integrating AI into agricultural education and research.

AI in Agricultural Education

Participants will explore the integration of AI into curriculum development and teaching methods for agricultural sciences. This includes AI-driven tools that can aid in personalized learning, virtual laboratories, and simulation-based teaching. Discussions will focus on the challenges and opportunities presented by AI in enhancing learning experiences for students in agricultural programs at various academic levels.

As AI continues to evolve, it is crucial to rethink assessment methods. The seminar will address how AI can be used to design innovative and authentic assessments in agricultural sciences. Participants will engage in workshops to brainstorm and develop AI-based assessment scenarios that reflect real-world agricultural challenges and solutions.

AI for Agricultural Research

The seminar will delve into how AI is transforming agricultural research, from improving crop yield predictions to analysing environmental data for sustainable farming practices. Topics will include machine learning applications for crop modelling, precision agriculture, climate change adaptation, and the development of AI-powered tools for fieldwork.

Ethical Considerations and Challenges

While AI holds immense potential, its use in education and research comes with ethical concerns. The seminar will tackle issues related to data privacy, algorithmic bias, and the potential for AI to reinforce inequities in agricultural research and education. Sessions will provide frameworks for addressing these challenges while ensuring that AI serves the global agricultural community equitably.

Seminar Goals

The seminar will aim to achieve the following outcomes:

Enhanced Understanding: Participants will gain a comprehensive understanding of the current and future roles of AI in agricultural sciences, including the benefits, limitations, and ethical challenges involved.

Practical Applications: Attendees will learn how to integrate AI tools and methodologies into agricultural curricula and research, improving both teaching quality and research productivity.

Collaboration and Networking: The event will provide opportunities for networking and collaboration among international institutions, researchers, and educators. The exchange of case studies, best practices, and resources will be encouraged.

Development of Actionable Strategies: The seminar will conclude with a series of actionable strategies and recommendations for incorporating AI into agricultural education and research, ensuring that participants leave with clear ideas on how to implement AI solutions in their own contexts.

Target Audience

The seminar is designed for faculty, researchers, and administrators from academic institutions, particularly those involved in agricultural science education and research. Additionally, policy-makers, technology developers, and students with a focus on AI and agriculture are invited to attend. By gathering a diverse group of stakeholders, the seminar aims to foster a multidisciplinary dialogue that can address the complex challenges and opportunities AI presents to the agricultural sector.

Conclusion

As AI continues to reshape the landscape of teaching and research across disciplines, the agricultural sciences are poised to benefit greatly from its integration. This seminar will serve as a platform to discuss, learn, and strategize the effective application of AI in advancing agricultural education and research. Through a combination of expert insights, practical workshops, and collaborative discussions, participants will be equipped to harness the power of AI to address global challenges in agriculture, from food security to environmental sustainability.

The seminar will be hosted in a hybrid format, offering both in-person and virtual participation to ensure a global reach and accessibility for all interested attendees.

Programme

Thursday

5th March

08h30 ○ Registration

09h00 **Welcome session**

- Intervention by the Rector of the University of Trás-os-Montes e Alto Douro.
- Welcome speech by the Dean of the Faculty of Agrarian and Veterinarian Sciences of the University of Trás-os-Montes e Alto Douro.
- Introduction to the Seminar's objectives by the organization of the seminar.

Session 1

Current framework of AI utilization in higher education

09h30 ○ Optimistic scenarios for AI applications in the context of teaching and learning within higher education. [30 minutes]
Professor Davinia Hernández-Leo, Full Professor of Engineering and Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona, Spain.

10h00 ○ How AI can be used to improve learning outcomes and help education systems to improve equity and quality in higher education – Key applications. [30 minutes]
Professor David Smith, Professor of Bioscience Education / Head of Research – School of Bioscience and Chemistry, Sheffield Hallam University, United Kingdom.

10h30 ○ Group discussion to assess the opportunities and risks of AI in higher education, evaluating available tools / applications to enhance learning outcomes and assessment in higher education.
[30 minutes]

11h00	Coffee Break
11h30	Policy guidelines and recommendations on how to address the use of AI in teaching and learning - Management implications. [30 minutes] Professor Mieke Uyttendaele, Full professor at the Department of Food Technology, Safety and Health at the Faculty of Bio-Science Engineering of Ghent University in Belgium.
12h00	Concluding comments of morning session, including the analysis of the responses to the questionnaire on the utilization of AI in the universities. [30 minutes]
12h30	Lunch
Session 2 Could AI be a powerful tool in the increasing complexity of modern agriculture research?	
14h00	Barriers, challenges, and outlook for AI adoption in the agri-food sector. [30 minutes] Professor Maria José Sousa, Associate Professor, Department of Political Science and Public Policy, ISCTE, Portugal.
14h30	Group discussion to debate main concerns and expectations of AI application in the agro-food sector. [30 minutes]
15h00	Application of AI in field crop production - case studies. [30 minutes] Engr. Fernando Alves, Head of the Research and Development Department at Symington Family Estates, Portugal.
15h30	AI-Driven Multisensor Intelligence for Teaching and Research in Modern Agriculture (and Forestry) [30 minutes] Professor Joaquim João Moreira de Sousa, Associate Professor, Engineering Department, UTAD, Portugal.
16h00	Coffee Break
16h30	Application of AI in animal production - case studies. [30 minutes] Dr. Said Benaissa, Researcher, Flanders Research Institute for Agriculture Fisheries and Food, Technology and Food Science Unit (ILVO), Belgium.

17h00	○ Application of AI in Veterinary Medicine – case studies. [30 minutes] Professor Mário Ginja, Associate Professor, Department of Veterinary Sciences, UTAD, Portugal.
17h30	Short Break
17h45	○ Round table with the invited speakers for discussion and proposing the concluding remarks for the day.
18h30	○ Closure for the day
20h00	Dinner

Friday
6th March

Session 3

Ethical considerations and challenges derived from the utilization of AI in Agricultural Sciences

09h30	○ Main ethical concerns of AI utilization in the developing context of digital competences in Agriculture. [30 minutes] Dr. Mark Ryan, Researcher on Digital Ethics at the subdivision of Transition Risk Innovation Governance, Wageningen Economic Research Institute, Wageningen, the Netherlands.
10h00	○ Legal and ethical aspects of AI utilization in Universities. [30 minutes] Prof. Rita Payan, Full Professor at the Faculty of Sciences and Technology, Department of Veterinary Medicine, University of Évora, Évora, Portugal.
10h30	○ Group discussion to evaluate potential legal and ethical drawbacks resulting from the utilization of AI. [30 minutes]
11h00	○ Concluding remarks. [15 minutes]

11h15	Coffee break
11h45	European higher education institutional challenges in a changing and mutable world - Presentation of ICA. [30-45 minutes] Professor Rasa Pakeltienė – ICA Secretary General. Associate Professor at the Faculty of Bioeconomy Development at the Agriculture Academy of Vytautas Magnus University, Kaunas, Lithuania.
12h30	Seminar closure
12h45	Lunch

VISIT

LIMITED INSCRIPTIONS

6th March - Afternoon

Enhanced Production Efficiency: Symington Family Estates, a renowned winery in Portugal's Douro Valley, utilizes AI-powered systems to analyse weather data, soil moisture, and vine health. This data-driven approach enables them to optimize vineyard management, resulting in increased grape yield and improved wine quality.