

126



ARTIFICIAL INTELLIGENCE IN AGRICULTURE

Scientific conference

NOVEMBER 20TH, 2024

AUDITORIUM-INAT





Artificial Intelligence in agriculture (Concept note)

**ON THE OCCASION OF ITS 126TH ANNIVERSARY,
INAT IS ORGANIZING A SCIENTIFIC CONFERENCE ON THE
THEME: ARTIFICIAL INTELLIGENCE IN AGRICULTURE
- NOVEMBER 20TH, 2024 - AUDITORIUM -**

On October 17, the National Agronomic Institute of Tunisia (INAT), the oldest engineering school in Tunisia and Africa, celebrated its 126th birthday. Founded in 1898, this prestigious institution has not only shaped the history of higher education in Tunisia but has also played a pivotal role in advancing agriculture and agronomic research across the African continent. Over the decades, INAT has continuously evolved to meet the changing needs of the agricultural sector, while contributing to the education of generations of researchers and agricultural professionals.

In celebration of this milestone, INAT is organizing an international scientific conference dedicated to exploring the transformative potential of artificial intelligence (AI) in agriculture. This event will bring together national and international experts to discuss cutting-edge AI applications in agriculture, aiming to enhance productivity and address today's global challenges.

Agriculture today faces increasingly urgent issues, such as climate change, the depletion of natural resources, soil degradation, and the pressure of a growing global population on food production systems. In this context, artificial intelligence has emerged as a promising solution for rethinking production methods, optimizing yields, and managing resources more efficiently and sustainably. AI applications in agriculture are diverse and offer significant opportunities for transformation. For instance, connected sensors and drones enable real-time monitoring of crop health, allowing for the quick detection of deficiencies or pests. By leveraging large volumes of meteorological, soil, and crop data, AI helps tailor agricultural practices and inputs to local conditions, making agriculture not only more productive but also more resilient to global changes.



Automation also plays a central role among AI-driven innovations in agriculture and fishing, enabling precise management and targeted interventions. This enhanced automation contributes to a more environmentally sustainable approach to agriculture, better adapted to contemporary challenges. In response to these global issues, INAT's scientific conference aims to foster dialogue and encourage collaboration between AI experts and agronomy researchers to explore new applications and develop concrete strategies for integrating AI into the agricultural practices of the future.

The key topics to be addressed at this scientific event include:

1. **Artificial Intelligence and precision agriculture:** Leveraging sensor technologies, drones, and smart irrigation systems to enhance crop management and yield.
2. **Data analysis for decision-making:** Utilizing data insights to optimize agricultural yields and minimize losses.
3. **Early detection of diseases and pests:** Applying AI methods to rapidly and accurately identify phytosanitary threats, facilitating proactive management.
4. **Sustainability and resource management:** AI-driven solutions to promote sustainable agriculture through optimized use of natural resources and a reduced environmental footprint.
5. **Robotics and automation:** Innovations in agricultural robotics aimed at automating tasks, reducing labor dependency, and increasing operational efficiency.





Artificial Intelligence in agriculture (Program)

November 20TH, 2024 Auditorium-INAT

08h00	Participants registration	
08h30	Mr. Hamadi HABAIEB: Secretary of state for water resources Mrs. Zohra LILI CHABAANE: President of the Institution for Agricultural Research and Higher Education Mr. Ghazi KRIDA: General Director of National Agronomy Institute of Tunisia	
09h00	Mr. Feras BARATRESH (Virginia Tech, USA)	Using AI to build resilient agricultural systems
9h30	Mr. Dirk MAIER (University of Iowa, USA)	Advancing feed technology with Artificial Intelligence and data analytics
10h00	Mr. Habib FATHALLAH (Faculty of Sciences, Bizerte)	Artificial Intelligence in tunisian agriculture: impactful integration and potential unlocks
10h30	Mr. Feren LANTOS (Faculty of Agricultural and Economic Sciences, Hungary)	Specialized sweet pepper (<i>Capsicum annuum</i> L.) cultivation in hungary
11h00	Coffee break	
11h30	Mr. Mario CIMINO (University of Pisa Italy)	Designing Artificial Intelligence operations in agriculture
12h00	Mr. Reynolds CHOW (Wageningen University)	Utilizing AI to identify groundwater pollution sources: a case study in the western Cape, South Africa
12h30	Mr. Issam NOURI (INAT, Tunisia)	L'intelligence Artificielle pour la résolution de problèmes multi-objectifs de la gestion des ressources en eau
13h00	Free Lunch time	



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14h30 Mrs. NADIA MZOUGH AGUIR: President of Carthage University

15h00 Mr. Pascal NEVEU (INRAE, France)

L'usage des données et de l'IA en agriculture

15h30 Mr. Florian KOVÁCS (Faculty of Agricultural and Economic Sciences, Hungary)

Application of bioimpedance spectroscopy for monitoring nitrogen supply to plants

16h00 Mr. Riadh ABDEL FATTEH (Sup'com, Tunisia)

How AI is revolutionizing disciplinary boundaries ? When agricultural cartography becomes a field of innovation for researchers

16h30 Mr. Larry VAUGHAN (Virginia Tech, USA)

Artificial Intelligence in agriculture

17h00

Discussion

Closing of the scientific conference

Happy 126th birthday, INAT!