



Ministero
dell'Università
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CLUB OF BOLOGNA



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*strategies for the development of agricultural
mechanisation*



- 34th Members' Meeting of the «Club of Bologna »
- ***Mechanisation and Technologies for New Farmers Needs***
 - 11-12 October 2025
 - Bari, Italy

Application of AI in Agricultural Machinery and Components

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34th Members' Meeting of the Club of Bologna Bari, October 11-12, 2025

What is AI?

ChatGPT 5 >

Artificial intelligence is the field of computer science that focuses on creating systems capable of performing tasks that normally require human intelligence.

These tasks include things like:

- understanding natural language,
- recognizing images or speech,
- solving problems,
- learning from experience (machine learning),
- making decisions,
- and adapting to new information.

In other words, AI aims to **simulate or augment human cognitive abilities**—such as reasoning, perception, and learning—through algorithms and computational models.

If you'd like, I can also give you a **more technical** (research-style) definition or a **simpler one** (for general audiences). Which would you prefer?



work in unstructured contexts characterized by complexity and uncertainty

What is an AI system?

AI ACT (13 June 2024) point 12)

“A key characteristic of AI systems is their capability to **infer**.

This capability to infer refers to the process of **obtaining the outputs**, such as predictions, content, recommendations, or decisions, which can influence physical and virtual environments, and to a capability of AI systems to derive models or algorithms, or both, **from inputs or data**.”

OECD/LEGAL/0449 - Amended on: 03/05/2024

“An AI system is a machine-based system that, for explicit or implicit objectives, **infers, from the input it receives, how to generate outputs** such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.”

What is an AI system?

AI ACT (13 June 2024) point 12)

“A key characteristic of AI systems is their capability to infer.

This capability to infer refers to the process of obtaining the outputs, such as predictions, and virtual environments, and physical environments, through the use of algorithms, data, and models or

Not every inference qualifies as artificial intelligence.

While inference is a necessary condition to define a system as AI, it is not sufficient: autonomy, adaptability, and data-driven learning are also required.

OECD/LEGAL/0043

“An AI system is a machine-based system that operates with explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.”

Objective of this session: try to give answers

How can AI can help agricultural engineering?

How can AI integrate into (agricultural) engineering?

When AI systems are high-risk?

How can an AI system be homologated/certified?

How to manage AI system self-evolving and continuous learning capability?

Are we ready for AI-based autonomous agricultural machines?

Session program:

SESSION 3		<i>Application of AI in Agricultural Machinery and Components</i> <u>Chairman: Paolo Gay</u> (CoB CoB Management Committee) - <u>Rapporteur: Zixuan He</u> (Pellizzi Prize '24)
8:50	9:30	3.1 – The EU Vision of AI and Its Role in Agricultural Automation <i>Georg Happich (Univ. Applied Sc. Kempten - Germany), Alessio Bolognesi (Federunacoma - Italy)</i>
9:30	9:55	3.2 – Embedded AI for Application in Real-time <i>Marko Bertogna (University Modena-Reggio Emilia - Italy)</i>
9:55	10:10	<i>Coffee break</i>
10:10	10:35	3.3 – The Use of AI for Productivity and Safety in Agricultural Machinery <i>Daniele Parazza (KIWITRON - Italy)</i>
10:35	11:05	Session 3 - Discussion and Key-Sentences drawing up