

## A Smart Farming Scenario

The screenshot shows a web browser window with the URL `campus.datacamp.com/courses/understanding-artificial-intelligence/what-is-artificial-intelligence-ai?ex=9`. The page is titled "Learn / Courses / Understanding Artificial Intelligence" and includes a "Course Outline" button. The main content area displays a question titled "A smart farming scenario!" with the following text: "AI is transforming even industries as unexpected as agriculture. A smart farming firm wants to develop an AI-powered solution, consisting of:" followed by a bulleted list: "• A series of drones that navigate crops and capture visual data, connected to..." and "• A central computer that aggregates data to create meaningful visualizations and also learns to detect potential hazards or plagues in crop images." Below this, the question asks: "Which of the following key areas and related disciplines of AI are likely necessary to implement this solution?" The interface includes a "Answer the question" button, a "Possible Answers" section with six radio button options: "Machine Learning / Deep Learning", "Natural Language Processing", "Data Science", "Robotics", "Computer Vision", and "Finance", each with a "PRESS" button. There is also a "Take Hint (-15 XP)" button and a "Submit Answer" button. The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 14:15 on 10/12/2024.

### Question

AI is transforming even industries as unexpected as agriculture.

A smart farming firm wants to develop an AI-powered solution, consisting of:

- A series of drones that navigate crops and capture visual data, connected to...
- A central computer that aggregates data to create meaningful visualizations and also learns to detect potential hazards or plagues in crop images.

Which of the following key areas and related disciplines of AI are likely necessary to implement this solution?

### Solution

**\*\*The correct answers are:\*\***

- Machine Learning / Deep Learning
- Robotics
- Computer Vision
- Data Science

## Explanation

1. **Machine Learning / Deep Learning:** These are essential for the central computer to learn patterns in crop data and detect potential hazards or plagues.
2. **Robotics:** Drones navigating through crops are a part of robotics, which involves autonomous movement and data collection.
3. **Computer Vision:** This is required to analyze visual data captured by drones to identify patterns, hazards, or crop issues.
4. **Data Science:** Data Science supports the aggregation and meaningful visualization of data collected by drones and processed by the central system.

Other disciplines like Natural Language Processing or Finance are not directly applicable to this specific scenario.