

**Title:** Artificial Intelligence applications in agriculture and environmental sciences

**Descriptions:** The course aims to present the fundamental principles of agriculture and environmental sciences (precision agriculture, plant phenotyping, blockchain in agri-food, etc.) and application of the artificial intelligence approach (robotics, big data analysis, image analysis, etc.) in these sectors.

The course will allow the students to acquire basic knowledge of the agriculture, environmental and the application of AI methods in these field and it will be divided in two parts (lesson and seminars).

The main topics covered in the lessons are:

- Precision agriculture
- AI-assisted surveillance and rapid detection of plant and animal diseases
- Classification of plant species through deep learning
- Time series forecasting for pollutant evaluation
- Blockchain in Agri-food value chains
- Application of artificial intelligence in agriculture (robotics, big data analysis, image analysis, ecc.)
- Biosensors
- The plant genome
- Plant phenotyping

The course includes several seminars so that students can acquire advanced knowledge on the artificial Intelligence applications in agriculture and environmental sciences.

**Duration of the course:** Basic concepts (12h) and Seminars (14h)

**Lectures:** Francesco Loreto, Barbara Mazzolai, Simone Orlandini, Paolo Fazzini, Valerio Paolini, Antonio Varriale, Alessandro Zompanti, Giuliano Poli, Stefano Bistarelli, Serena Aceto, Beniamino Gioli, Michelina Ruocco.