**Agricultural Extension in South Asia**

# ARTIFICIAL INTELLIGENCE IN AGRICULTURE
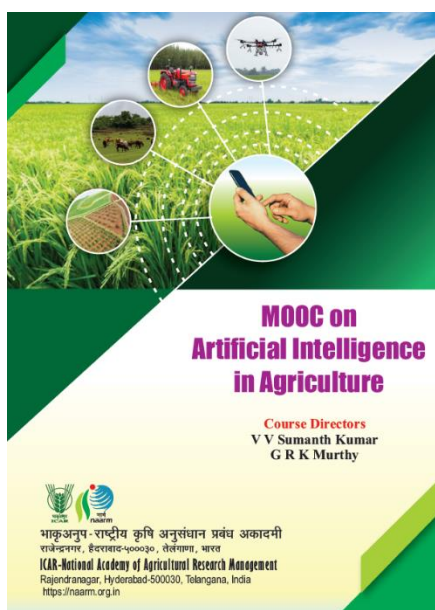
**Platform:** NAARM MOOCs
**Duration:** 30 days (self-paced), offered during March 1 - 31, 2024.
**Certification:** Participation certificate (free); Completion certificate – successful completion of final examination + ₹1500, either of the one certificate is issued based on participants preference.

In today's rapidly evolving digital landscape, the NAARM MOOCs course on Artificial Intelligence in Agriculture stands out as a highly relevant and innovative program. It provides a thorough overview of fundamental Artificial Intelligence (AI) principles, starting with the basics of websites, clouds, and domains, and moving on to detailed AI concepts such as deep learning, machine learning, and generative AI. Characterized as a rapid rather than smart learner, AI can efficiently complete tasks in a short time, and its exponential growth is astonishing. Staying abreast of these advancements is crucial to avoiding falling behind. I highly recommend this course to agricultural extension professionals seeking to enhance their knowledge and adapt to the ongoing digital transformation.

The course comprehensively covers the basics of AI, making it valuable for enthusiasts looking to apply AI in their respective fields. Introduction to free domains and clouds, allowing participants to explore AI applications on various free platforms such as Teachable Machine and Chat GPT made this course more interesting. Course experts from diverse fields effectively shared their experiences and explained complex topics in simple terms. The course can be accessed at any time of day, although weekly completion deadlines must be met.

**Course Topics:**

1. Rapid Application Development
2. AI Basic Concepts
3. Deep Learning Concepts
4. Machine Learning Concepts
5. Precision Agriculture
6. Building IoT-based Smart Farming
7. ChatGPT
8. Teachable Machine
9. Introduction to Python
10. Image Processing
11. Plant Disease Identification
12. Pest Detection using OpenCV
13. Product Grading

The course is delivered entirely through recorded videos, with each video lasting 15–25 minutes, supplemented by course materials. Spanning four weeks, the course covers three to four chapters per week. Participant progress is monitored through daily and weekly logins, ensuring regular engagement with the material, and it can be tracked by the participant themselves.

An additional feature that is particularly beneficial for experts working in agri-startups is a separate set of videos from agri-startups that are utilizing AI in their innovations. It was enlightening to see the different AI tools being used in agriculture.

Assessment:
- Course Access (computed based on watching time and completion of course videos): 20%
- Reflection Submissions (mandatory engagement as feedback on the platform): 20%
- Assignment: 10%
- Final Examination: 50%

The final examination is conducted on a specific day within a stipulated time frame and consists of 40 multiple-choice questions that can be attempted only once. During the examination period, course content is not accessible on the platform. A participation certificate is awarded for achieving a total score of 40%, which is free of charge, while a completion certificate requires a total score of 50%, with at least 40% from the final examination, plus a ₹1500 fee. Assignments involve coding in Python, adding an interesting practical element to the course.

Overall, this course serves as an excellent introduction to AI for those interested in the field, particularly in agriculture. It covers all essential aspects for beginners and is a valuable step toward understanding AI's potential to drive digital transformation in agriculture and allied sectors. The inclusion of practical elements, such as coding in Python and the real-world applications showcased by agri-startups, makes this course both informative and engaging, ensuring that participants gain a well-rounded understanding of AI in agriculture.

The course structure, with its blend of video content, expert insights, and practical assignments, provides a robust learning experience. The ability to access the course at any time offers flexibility, while the weekly deadlines ensure that participants stay on track. The comprehensive curriculum, which spans various facets of AI and its application in agriculture, equips learners with the knowledge and skills needed to harness the power of AI in their professional endeavours. However, one area for improvement is the lack of live interaction with experts to resolve doubts. While the discussion forum is available, it does not always address all concerns comprehensively. In conclusion, this course is a must for anyone looking to delve into AI, particularly those in the agricultural sector, as it lays a solid foundation for future advancements and applications in the field.



*Dr. J. Tamizhkumaran (JTK) is Assistant General Manager – Veterinary Services at Dvara E Dairy Solutions Pvt Ltd, IITM Research Park, Taramani, Chennai. He can be reached at: docjtk@gmail.com*