1. Record Nr. UNINA9910897981703321

Titolo	Artificial Intelligence Techniques in Smart Agriculture / / edited by Siddharth Singh Chouhan, Akash Saxena, Uday Pratap Singh, Sanjeev Jain
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819758784 9819758785
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (XXII, 287 p. 93 illus., 86 illus. in color.)
Disciplina	338.10285
Soggetti	Agriculture Agricultural biotechnology Artificial intelligence Image processing - Digital techniques Computer vision Agricultural Biotechnology Artificial Intelligence Computer Imaging, Vision, Pattern Recognition and Graphics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1. Assessing the importance and need of Artificial Intelligence for Precision Agriculture -- Chapter 2. Challenges in Achieving Artificial Intelligence in Agriculture -- Chapter 3. Introduction to Artificial Intelligence techniques in Agricultural applications and their future aspects -- Chapter 4. Agricultural Artificial Intelligence: Obstacles and Opportunities -- Chapter 5. Smart Farming Management System: Pre and Post Production Interventions -- Chapter 6. Introduction to various intelligent devices and implementation platforms -- Chapter 7. Fruit Counting and Analysis Using Artificial Intelligence Approaches -- Chapter 8. Deep Learning-Based Plant Stress Diagnosis: An Optimized Generative Augmentation Model Approach -- Chapter 9. Transformative Impact of AI-Driven Computer Vision in Agriculture -- Chapter 10. An in-depth analysis of artificial intelligence-based crop pest management and water supply regulation -- Chapter 11. AI for

Data-Driven Decision Making in Smart Agriculture: From Field to Farm Management -- Chapter 12. AI based Regulation of Water supply and Pest Management in Farming -- Chapter 13. Advancement and Challenges of Implementing Artificial Intelligence of Things in Precision Agriculture -- Chapter 14. Enabling Digital Platforms: Towards Smart Agriculture -- Chapter 15. IoT and Drone-Based Field Monitoring and Surveillance System -- Chapter 16. IoT based Real Time Farm Management System for Smart Agriculture.

Sommario/riassunto

This edited volume explores the integration of artificial intelligence to improve crop production. It addresses the critical need for intelligent crop management in light of the world's escalating population. Encompassing a spectrum of technologies, including computer vision, image processing, soft computing, machine learning, and deep learning, the book explores advancements in decision-making systems. It integrates data science methodologies, Internet of Things, wireless communications, and a range of sensors and actuators to provide precise, timely, and cost-effective solutions to agricultural challenges, ultimately enhancing both the quality and quantity of crop yields. The book empowers its audience to direct their efforts towards designing models and prototypes that benefit society and the environment, making it an indispensable resource for those eager to shape the future of intelligent agriculture. It serves as a comprehensive guide for students, scholars, and academicians keen on delving into the transformative field of artificial intelligence in agriculture. Researchers, scientists, and field experts will find invaluable insights to guide their exploration and contribution to this domain.