HYPERAUTOMATION IN PRECISION AGRICULTURE
ADVANCEMENTS AND OPPORTUNITIES FOR SUSTAINABLE FARMING

SCOPE OF THE BOOK

As the hyperautomation is the future of agriculture, this book provides a comprehensive overview of recently developed principles and procedures of state–of–art automation in agriculture to improve productivity and resource optimization. it also included newly developed applications and real–world applications in the field of hyperautomation to deliver sustainable agriculture practices, making the book's content intuitive and practical in its implementation.

LIST OF TOPICS

Section 1: Fundamentals of Hyperautomation Technology for sustainable agriculture
1.1: A global overview and the fundamentals of sustainable agriculture.
1.2: Hyperautomation: digital transformation of precision agriculture & sustainable practices.
1.3: Remote sensors for hyperautomation in agriculture.
1.4: Advances in automation and algorithms for sustainable agriculture.
1.5: Applications of hyperautomation in decision-making process & sustainable crop production.

Section 2: Smart agriculture automation using advanced technologies.
2.1: Smart sustainable farming using IoT, cloud computing, and big data.
2.2: Integrated IoT in irrigation management for sustainable agriculture and smart farming.
2.3: Monitoring and mapping of agricultural parameters using AI
2.4: Sustainable plant disease protection using ML and DL algorithms.
2.5: Modeling, simulation, and visualization of different crop parameters using advanced algorithms.
2.6: Estimation of soil properties for sustainable crop production using multisource data fusion.

Section 3: Advances in remote sensing for precision crop production
3.1: Advanced remote sensing technologies for crop disease and pest detection.
3.2: Soil and field analysis using unmanned aerial vehicles (UAV) for smart and sustainable farming.
3.3: Crop health assessment using Multi/hyperspectral sensors
3.4: Sustainable yield prediction using the fusion of optical and microwave sensors.
3.5: Assessment of crop damage and crop progress using remote sensing.
3.6: Soil moisture monitoring using optical/microwave remote sensing dataset.

Section 4: Robotic/Digital Process Automation (RPA/DPA) in agriculture and field applications.
4.1: Robotic/Digital Process Automation (RPA/DPA) for sustainable plantation.
4.2: Robotics-assisted precision and sustainable irrigation, harvesting and fertilizing processes.
4.3: Computer vision technology for weed detection and removal.
4.4: LiDAR/RADAR-robots in monitoring & mapping crop growth for sustainable crop production.
4.5: Agricultural Robots in smart and sustainable Greenhouses.

Section 5: Emerging trends and case studies in Hyperautomation of Sustainable Agriculture
5.1: Recent applications Hyperautomation in Agriculture sector.
5.2: Hyperautomation-enabled smart farming: challenges and opportunities.
5.3: Innovations in industrial hyperautomation & smart agriculture.
5.4: Challenges & future trends in the Hyperautomation of Sustainable Agriculture.
5.5: Challenges & opportunities in the adoption of technologies and their environmental impact.

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THE BOOK WILL BE SENT FOR INDEXING CONSIDERATION TO SCOPUS

IMPORTANT NOTE:

➤ SINGLE COLUMN, DOUBLE SPACING, TIMES NEW ROMON, 12-FONT SIZE, 16-24 PAGES, 5000-6000 WORDS.
➤ PLAGIARISM MUST BE LESS THAN 10% (OVERALL) AND NOT MORE THAN 2% FROM SINGLE SOURCE.
➤ FIGURES MUST BE EITHER SELF DRAWN OR PERMISSION TAKEN FROM THE SOURCE.
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