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Nota di contenuto	Theme 1:Advanced Technologies in Food Production and Processing -- 1.Nanotechnology and Biosensors in Food Processing, Packaging, and Safety -- 2.AI/ML applications in agriculture and food processing -- 3. The Convolutional Neural Networks Model of Algorithm is used to identify diseases in the leaves of sweet lemon plants-A Comprehensive Review -- 4.Application of Artificial Intelligence in Sexing of Hatching Eggs: Present Status, Challenges and Future Direction for Sustainable Egg Industry -- 5.Technological Advances in Smart and Sustainable Agri-culture: The Role of Internet of Things, Artificial Intelligence, Big Data Analysis, Machine Learning & Deep Learning -- 6.Internet of Things (IoT) and artificial intelligence (AI) in agriculture: applications for

sustainable crop protection -- 7.Digital Twins & Industry 5.0 On Food Management -- 8.Robotics and Automation in food manufacturing -- 9.Exploring the Fusion - Applications and Challenges of Integrating Food Technology with Big Data and Industry 5.0 -- 10.Utilizing Industry 5.0 Technologies to improve food production and promote sustainability in Agriculture -- 11.Industry 5.0 technologies for sustainable food production -- 12.Quantifying the Complexity of Agricultural Data for Regression and Classification Problems -- 13. Cultivating with Precision: Mitigating Risks and Maximizing Yields -- 14.Leveraging Artificial Intelligence and Millet for Sustainable Agriculture: Advancing UN SDGs in the Era of Industry 5.0 -- 15. Optimizing Nutrient Uptake: Nano-Fertilizers and Soil Amendments -- 16.IoT and digital twins for smart food supply chains -- Theme 2: Sustainability, Ethics, and Regulatory Aspects in Food Industry 5.0 -- 17.Emerging trends shaping the sustainable future of food industry 5.0: Challenges and opportunities -- 18.Future Trends and Prospects of the Food Industry: Perspectives from Hospitality -- 19.Harvesting Ethics: Forging Responsible Paths in AI and ML for the Agri-Food Industry -- 20.Redefining the Agri-Food Landscape: The Role of Digital Agriculture and Precision Farming in Mitigating Climate Change Impacts on Agri-food Sector -- 21.Regulatory Framework for Industry 5.0 in Food Wastage in Hospitality Industry: Transmuting Intelligent Food System Uplifting Sustainability -- Theme 3:Economic and Industry Perspectives in Food Technology -- 22.Feeding the Future: Economic Implications of Food Tech Innovation -- 23. Future Trends and Prospects for diet in the Food Industry -- 24. Future trends and prospects in dairy industry -- 25.Leveraging Blockchain Technology for Enhanced Food Traceability and Transparency -- 26. Understanding the Economic Dynamics of the Food Tech Revolution -- 27. Blockchain Technology in Food Supply Chain Management: Enhancing Traceability, Safety, and Quality.

Sommario/riassunto

"Food and Industry 5.0: Transforming the Food System for a Sustainable Future" offers a groundbreaking exploration of cutting-edge technologies reshaping the global food landscape. This comprehensive volume delves into innovations driving the fifth industrial revolution in food production and distribution. The book examines nanotechnology and biosensor applications in food processing and safety, analyzing their potential to revolutionize quality monitoring, extend shelf life, and enhance traceability. It unveils the transformative power of artificial intelligence and machine learning across the food value chain, from plant disease detection to sustainable poultry production. Significant attention is given to the integration of Internet of Things (IoT) and digital twin technology in agriculture and food supply chains, offering insights into real-time monitoring, predictive maintenance, and optimization techniques. The text explores robotics in food manufacturing, emphasizing advancements in efficiency, waste reduction, and safety. Crucial methodologies for quantifying and analyzing complex agricultural data are addressed, presenting both regression and classification approaches in precision agriculture. Sustainability is a key focus, with chapters examining nano-fertilizers, soil amendments, and AI-integrated crop systems designed to advance UN Sustainable Development Goals. Blockchain technology's role in enhancing food traceability and safety is investigated, complete with real-world case studies. The book addresses the complex regulatory landscape surrounding Industry 5.0 technologies, including waste management in hospitality and ethical considerations of AI deployment. Concluding chapters offer forward-looking analyses of emerging trends in dairy, diet, and hospitality.

subsectors. This meticulously researched volume employs a wide array of methodologies, from experimental studies to economic modeling and qualitative research. "Food and Industry 5.0" is an indispensable resource for food scientists, agricultural researchers, computer scientists, policymakers, and industry professionals. By bridging multiple disciplines, it provides a scientifically rigorous, data-driven roadmap for creating a more sustainable, efficient, and ethical global food system.
