

Preface

The integration of Artificial Intelligence (AI) in agriculture is reshaping the future of crop management and precision farming, offering solutions to the challenges of food security, resource depletion, and climate change. This book, *Artificial Intelligence in Smart Agriculture for Sustainable Crop Management and Precision Farming*, explores the transformative potential of AI in enhancing farming practices. By leveraging AI technologies such as machine learning, computer vision, and IoT, farmers can optimize resource usage, monitor crop health, predict pest outbreaks, and improve yields with greater precision. The book highlights AI's role in promoting sustainability, increasing efficiency, and reducing environmental impacts, offering practical applications and case studies. As agricultural systems evolve, AI provides the tools needed to ensure long-term viability, reduce waste, and address the global demand for food. This work aims to provide researchers, professionals, and policymakers with insights into AI-driven advancements for sustainable, data-driven agricultural practices.