

1. Record Nr.	UNINA9910743233803321
Titolo	Internet of things and its applications : select proceedings of ICIA 2020 // Keshav Dahal [and four others], editors
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-7637-2 981-16-7636-4
Descrizione fisica	1 online resource (457 pages)
Collana	Lecture Notes in Electrical Engineering ; ; Volume 825
Disciplina	004
Soggetti	Internet of things
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr.	UNINA9910842295303321
Autore	Khamparia Aditya
Titolo	Microbial Data Intelligence and Computational Techniques for Sustainable Computing
Pubbl/distr/stampa	Singapore : , : Springer, , 2024 ©2024
ISBN	981-9996-21-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (398 pages)
Collana	Microorganisms for Sustainability Series ; ; v.47
Altri autori (Persone)	PandeyBabita PandeyDevendra Kumar GuptaDeepak
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Objective of the Book -- Contents -- Editors and Contributors -- Chapter 1: The Contribution of Artificial Intelligence to Drug Discovery: Current Progress and Prospects for the Future -- 1.1 Introduction -- 1.2 Historical Evolution of Drug Discovery -- 1.3 Fundamentals of Artificial Intelligence in Drug Discovery -- 1.4 Data-centric Approaches in Artificial Intelligence for the Field of Drug Discovery -- 1.5 Data-driven Approaches in AI for Drug Discovery -- 1.6 Hurdles and Prospects in Artificial Intelligence for the Field of Drug Discovery -- 1.6.1 Navigating Challenges and Embracing Prospects in AI-driven Drug Discovery -- 1.6.2 Pinpointing Bottlenecks in Traditional Drug Discovery -- 1.6.3 Untangling AI Implementation Challenges -- 1.6.4 Glimmers of Possibilities Unleashed by AI -- 1.6.5 A New Dawn in Drug Discovery -- 1.7 Case Study: AlphaFold's Acceleration in Drug Discovery -- 1.7.1 Significance of AlphaFold -- 1.7.1.1 Mathematical Mastery Behind AlphaFold's Prognostic Abilities -- 1.7.2 Elevating Drug Discovery: The AlphaFold Impact on CDK20 Inhibitor Discovery -- 1.7.3 AlphaFold's Multi-dimensional Drug Discovery Impact -- 1.7.4 Navigating Challenges and Seizing Opportunities -- 1.7.5 The Eclipsing Horizon -- 1.8 AI in the Era of Pandemics: Case of COVID-19 -- 1.8.1 Overview of the COVID-19 Pandemic -- 1.8.2 AI's Crucial Role in Drug Discovery and Vaccine

Development -- 1.8.3 Leveraging Mathematical Models for Drug Prediction -- 1.8.4 A Glimpse into the Future -- 1.9 Deep Learning in Antibiotic Discovery -- 1.10 AI Techniques in Antibiotic and Antiviral Development -- 1.11 Applications of AI in Drug Discovery -- 1.11.1 Target Identification and Validation -- 1.11.2 Compound Screening and Design -- 1.11.3 Clinical Trial Optimization -- 1.11.4 Concrete Examples of AI's Impact -- 1.12 The Future of AI in Drug Discovery.

1.12.1 Emerging AI Techniques in Drug Discovery -- 1.12.2 The Potential of Personalized Medicine via AI -- 1.12.3 Predictive Mathematical Models Shaping Drug Discovery's Future -- 1.13 Conclusion -- 1.13.1 Revolutionizing Microbial Drug Discovery with Artificial Intelligence -- 1.13.2 Anticipating Future Trends and Breakthroughs -- 1.13.3 Potential Breakthroughs Envisioned by AI -- References -- Chapter 2: Prediction of Plant Disease Using Artificial Intelligence -- 2.1 Introduction -- 2.2 Fundamentals of Plant Disease Diagnosis -- 2.2.1 Plant Disease Types -- 2.2.2 Symptoms and Signs -- 2.2.3 Conventional Diagnostic Techniques -- 2.2.4 Limitations of Traditional Methods -- 2.2.5 Need for AI-driven Innovative Methods -- 2.3 Role of Artificial Intelligence in Plant Disease Diagnosis -- 2.3.1 AI: Changing the Diagnosis of Plant Disease -- 2.3.2 Disease Diagnosis Based on Images -- 2.3.3 Sensor Data and Disease Forecasting -- 2.4 AI's Advantages in Plant Disease Diagnosis -- 2.4.1 Early Disease Detection and Prevention -- 2.4.2 Accuracy and Scalability -- 2.4.3 Reduced Dependence on Chemicals -- 2.4.4 Improved Decision-making Capability -- 2.5 Barriers to Implementing AI Techniques in Plant Disease Diagnosis -- 2.5.1 Data Accuracy -- 2.5.2 Model Interpretability -- 2.5.3 Infrastructure and Accessibility -- 2.6 Current Trends in AI Involvement in Plant Disease Diagnostics -- 2.7 Data Collection and Pre-processing -- 2.8 The Significance of Data Quality -- 2.9 Data Sources -- 2.10 Techniques for Pre-processing Data -- 2.10.1 Data Augmentation -- 2.10.2 Standardization and Normalization -- 2.10.3 Feature Extraction -- 2.10.4 Balancing Classes -- 2.11 Data Collection and Pre-processing Challenges -- 2.11.1 Labeling Complexity -- 2.11.2 Imbalanced Data -- 2.11.3 Data Access and Privacy -- 2.11.4 Environmental Variability.

2.12 Building and Training AI Models -- 2.12.1 Comparative Analysis of Choosing Appropriate AI Algorithms for Plant Disease Diagnosis -- 2.12.2 Convolutional Neural Networks (CNN) -- 2.12.3 Random Forests -- 2.12.4 Factors Affecting Algorithm Selection -- 2.12.4.1 Data Accessibility -- 2.12.4.2 Interpretability -- 2.12.4.3 Computing Power -- 2.12.4.4 Real-time Requirements -- 2.13 Image-based Plant Disease Diagnosis -- 2.13.1 Data Pre-processing and Training AI Models -- 2.13.2 Systematic Algorithm for Image-based Disease Diagnosis -- 2.14 Model Evaluation -- 2.15 Sensor Data-based Disease Diagnosis -- 2.16 Future Directions and Innovations -- 2.16.1 Explicit AI for Interpretability -- 2.16.2 Fusion of Multi-modal Data -- 2.16.3 Limited Transfer Learning with Data -- 2.16.4 Active Learning Techniques -- 2.16.5 Distributed Learning for Decentralized Data -- 2.17 Integration of AI for Plant Disease Diagnosis Using Robotics, Drones, and Automated Farm Equipment -- 2.17.1 Robotics for Precision Plant Inspection -- 2.17.2 Aerial Surveillance Using Drones -- 2.17.3 Autonomous Farm Machinery for Personalized Care -- 2.17.4 Analyzing Real-time Data -- 2.17.5 Improved Disease Surveillance -- 2.18 AI Revolutionizing Sustainable Farming Methods and Precision Agriculture -- 2.19 Conclusion -- References -- Chapter 3: Computer Vision-based Remote Care of Microbiological Data Analysis -- 3.1 Introduction -- 3.2 The Role of Computer Vision -- 3.2.1 Automatization of Microorganism Identification -- 3.2.2 Classification

and Taxonomy -- 3.2.3 Quantification -- 3.2.4 Tracking and Behavior Analysis -- 3.2.5 Presence/Absence Detection -- 3.2.6 High-throughput Screening -- 3.2.7 Integration with Other Technologies -- 3.2.8 Remote Monitoring -- 3.2.9 Applications -- 3.3 Steps Required to Implement -- 3.4 Microbiological Data.

3.5 Different Algorithms to Implement Computer Vision -- 3.6 Challenges and Future Directions -- 3.7 Conclusion -- References -- Chapter 4: A Comparative Study of Various Machine Learning (ML) Approaches for Fake News Detection in Web-based Applications -- 4.1 Introduction -- 4.1.1 Logistic Regression -- 4.1.2 Decision Tree Classifier -- 4.1.3 Random Forest Classifier -- 4.1.4 Linear Support Vector Classifier (SVC) -- 4.1.5 Multinomial Naive Bayes (NB) -- 4.1.5.1 Naive Bayes Equation -- 4.2 Related Work -- 4.3 Work Done -- 4.4 Result Discussion -- 4.5 Conclusions and Future Direction -- References -- Chapter 5: Analytics and Decision-making Model Using Machine Learning for Internet of Things-based Greenhouse Precision Management -- 5.1 Introduction -- 5.2 Related Work -- 5.3 Development of IoT-based Smart Farming System -- 5.4 Experimental Results and Discussion -- 5.5 Conclusion -- References -- Chapter 6: DistilBERT-based Text Classification for Automated Diagnosis of Mental Health Conditions -- 6.1 Introduction -- 6.2 Related work -- 6.3 Dataset and Prepossessing -- 6.3.1 Dataset -- 6.3.2 Prepossessing -- 6.4 Methodology -- 6.4.1 Batch Training -- 6.4.2 Hyperparameter Tuning -- 6.4.3 Algorithm -- 6.4.4 Evaluation Standards -- 6.5 Simulation Results and Discussion -- 6.5.1 Model Training -- 6.5.2 Text Data Distribution Analysis -- 6.5.3 Confusion Matrix -- 6.5.4 Visualizing Word Clouds -- 6.6 Conclusion -- References -- Chapter 7: An Optimized Hybrid ARIMA-LSTM Model for Time Series Forecasting of Agricultural Production in India -- 7.1 Introduction -- 7.2 Materials and Methods -- 7.2.1 Data -- 7.2.2 Stationary Test -- 7.2.3 Autoregressive Integrated Moving Average (ARIMA) -- 7.2.4 Long Short-term Memory (LSTM) -- 7.2.5 Optimized Hybrid ARIMA-LSTM -- 7.3 Results and Discussion -- 7.4 Conclusion -- References.

Chapter 8: An Exploratory Analysis of Machine Intelligence-enabled Plant Diseases Assessment -- 8.1 Introduction -- 8.2 Literature Review -- 8.3 Working Methodology and Datasets -- 8.4 Advantages and Constraints -- 8.5 Challenging Issues of the Framework -- 8.6 Conclusion -- References -- Chapter 9: Synergizing Smart Farming and Human Bioinformatics Through IoT and Sensor Devices -- 9.1 Introduction -- 9.2 Smart Farming and IoT: Enhancing Agricultural Productivity -- 9.2.1 IoT in Agriculture -- 9.2.2 Precision Agriculture -- 9.2.3 Predictive Analytics -- 9.2.4 Resource Optimization -- 9.3 Benefits of IoT and Sensor Technologies in Agriculture -- 9.4 Human Bioinformatics and IoT: Revolutionizing Healthcare -- 9.4.1 IoT in Healthcare -- 9.4.2 Personalized Health Insights -- 9.4.3 Disease Management -- 9.4.4 Healthcare Accessibility -- 9.5 Synergy Between Smart Farming and Human Bioinformatics -- 9.5.1 Environment-Health Nexus -- 9.5.2 Shared Data Analytics -- 9.5.3 Nutritional Sustainability -- 9.5.4 Early Warning Systems -- 9.6 Benefits of Combining Insights -- 9.6.1 Holistic Approach -- 9.6.2 Cross-Domain Findings -- 9.6.3 Enhanced Resource Management -- 9.6.4 Impact on Public Health -- 9.7 Challenges, Limitations, and Ethical Considerations -- 9.7.1 Data Security and Privacy -- 9.7.2 Data Accuracy and Quality -- 9.7.3 Interoperability and Standardization -- 9.7.4 Technology Access and Literacy -- 9.7.5 Environmental Impact -- 9.8 Future Possibilities, Innovations, and Research Areas -- 9.8.1 Predictive Public Health Models -- 9.8.2 Data-Driven Nutritional Sustainability -- 9.8.3 Environmentally Friendly Precision Agriculture -- 9.8.4 Solutions for

Personalized Agri-Health -- 9.8.5 Ethical Data Governance -- 9.8.6  
Cross-Disciplinary Training -- 9.8.7 Climate-Health Resilience -- 9.9  
Conclusion -- References.

Chapter 10: Deep Learning-Assisted Techniques for Detection and  
Prediction of Colorectal Cancer From Medical Images and Microb.

---