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Nota di contenuto	Part. 1. Mathematical Modeling and analysis for Covid-19 Pandemic -- Chapter. 1. An Extended Fractional SEIR Model to Predict the Spreading Behavior of COVID-19 Disease using Monte-Carlo Back Sampling -- Chapter. 2. Dynamics and optimal control methods for the COVID-19 model -- Chapter. 3. Optimal Strategies to Prevent COVID-19 from Becoming a Pandemic -- Chapter. 4. Modeling and analysis of COVID-19 based on a deterministic compartmental model and Bayesian inference -- Chapter. 5. Predicting the Infection Level of Covid-19 Virus using Normal Distribution Based Approximation Model and PSO -- Chapter. 6. An Optimal Vaccination Scenario for COVID-19 Transmission Between Children and Adults -- Part. 2. Intelligent Control Techniques and Covid-19 Pandemic -- Chapter. 7. The Role of

Artificial Intelligence and Machine Learning for the Fight Against COVID-19 -- Chapter. 8. Coronavirus Lung Image Classification with Uncertainty Estimation using Bayesian Convolutional Neural Networks -- Chapter. 9. Identify Unfavorable COVID Medicine Reactions From The Three-Dimensional Structure By Employing Convolutional Neural Network -- Chapter. 10. Using Reinforcement Learning for optimizing COVID-19 vaccine distribution strategies -- Chapter. 11. Incorporating Contextual Information and Feature Fuzzification for Effective Personalized Healthcare Recommender System -- Chapter. 12. Prediction of Growth and Review of Factors influencing the Transmission of COVID-19 -- Chapter. 13. COVID-19 Combating Strategies and Associated Variables for its Transmission: An approach with multi-criteria decision-making techniques in the Indian context -- Chapter. 14. Crisis management, Internet and AI: Information in the age of COVID-19, and future pandemics.

Sommario/riassunto

The contributions in this carefully curated volume, present cutting-edge research in applied mathematical modeling for combating COVID-19 and other potential pandemics. Mathematical modeling and intelligent control have emerged as powerful computational models and have shown significant success in combating any pandemic. These models can be used to understand how COVID-19 or other pandemics can spread, analyze data on the incidence of infectious diseases, and predict possible future scenarios concerning pandemics. This book also discusses new models, practical solutions, and technological advances related to detecting and analyzing COVID-19 and other pandemics based on intelligent control systems that assist decision-makers, managers, professionals, and researchers. Much of the book focuses on preparing the scientific community for the next pandemic, particularly the application of mathematical modeling and intelligent control for combating the Monkeypox virus and Langya Henipavirus.