

# Controlling Epidemics With Mathematical and Machine Learning Models

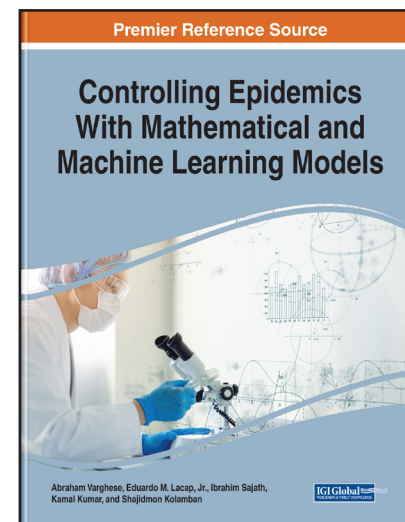
Part of the Advances in Computational Intelligence and Robotics Book Series

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## Description:

Communicable diseases have been an important part of human history. Epidemics afflicted populations, causing many deaths before gradually fading away and emerging again years after. Epidemics of infectious diseases are occurring more often, and spreading faster and further than ever, in many different regions of the world. The scientific community, in addition to its accelerated efforts to develop an effective treatment and vaccination, is also playing an important role in advising policymakers on possible non-pharmacological approaches to limit the catastrophic impact of epidemics using mathematical and machine learning models.

**Controlling Epidemics With Mathematical and Machine Learning Models** provides mathematical and machine learning models for epidemical diseases, with special attention given to the COVID-19 pandemic. It gives mathematical proof of the stability and size of diseases. Covering topics such as compartmental models, reproduction number, and SIR model simulation, this premier reference source is an essential resource for statisticians, government officials, health professionals, epidemiologists, sociologists, students and educators of higher education, librarians, researchers, and academicians.



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## Topics Covered:

Classical Regression Model

Compartmental Models

Continuous Outcomes

COVID-19 Patients

Epidemiology Models

Extended Compartmental Model

Graph Theory Approach

Machine Learning

Network and Epidemic Model

Reproduction Number

SIR Model Simulation

**Subject:** Computer Science and Information Technology

**Classification:** Authored Reference

**Readership Level:** Advanced-Academic Level (Research Recommended)

**Research Suitable for:** Advanced Undergraduate Students; Graduate Students; Researchers; Academicians; Professionals; Practitioners

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