Simulation is the art of using tools – physical or conceptual models, or computer hardware and software, to attempt to create the illusion of reality. The discipline has in recent years expanded to include the modelling of systems that rely on human factors and therefore possess a large proportion of uncertainty, such as social, economic or commercial systems. These new applications make the discipline of modelling and simulation a field of dynamic growth and new research.

Stanislaw Raczynski outlines the considerable and promising research that is being conducted to counter the problems of uncertainty surrounding the methods used to approach these new applications. It aims to stimulate the reader into seeking out new tools for modelling and simulation.

• Examines the state-of-the-art in recent research into methods of approaching new applications in the field of modelling and simulation

• Provides an introduction to new modelling tools such as differential inclusions, metric structures in the space of models, semi-discrete events, and use of simulation in parallel optimization techniques

• Discusses recently developed practical applications: for example the PASION simulation system, stock market simulation, a new fluid dynamics tool, manufacturing simulation and the simulation of social structures

• Illustrated throughout with a series of case studies
Modelling and Simulation: The Computer Science of Illusion will appeal to academics, postgraduate students, researchers and practitioners in the modelling and simulation of industrial computer systems. It will also be of interest to those using simulation as an auxiliary tool.

ABOUT THE AUTHOR

Stanislaw Raczynski is a professor of control theory, electronics and computer simulation at the Panamerican University in Mexico City. He is also the international director of the Society for Modelling Simulation in San Diego. He has authored 1 book, “Simulacion por computadora” and over 70 journal articles & conference papers.

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