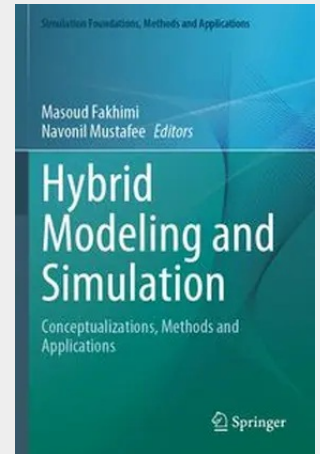


## Hybrid Modeling and Simulation

Conceptualizations, Methods and Applications

The unique book advances understanding of modelling complex systems using hybrid approaches that combine discrete-event, agent-based, and system dynamic simulations with research approaches and artefacts from other scientific disciplines. As systems become increasingly large and complex, it is a challenge to capture the intricacies of the underlying system and offer novel forms of analysis using only models that employ a single simulation technique. The book underscores the importance of both hybrid simulation (employing techniques primarily developed in the field of modelling and simulation) and hybrid modelling (incorporating simulation with methods from wider disciplines such as applied computing, data science, engineering, and soft/qualitative operations research). Furthermore, the text aims to inspire further research and practice, fostering the growth of cross-disciplinary hybrid models. Topics and features: - Provides a comprehensive overview of hybrid modelling and simulation, including methodological extensions and novel applications - Features case studies and examples demonstrating the synergy realized by applying hybrid methods - Calls for innovation and growth of the discipline by incorporating diverse scientific perspectives - Encourages adoption of interdisciplinary methods to engender improved insights from simulation studies - Promotes interdisciplinary collaboration, pushing modelling and simulation into new research and application areas This comprehensive volume will appeal to researchers, academics, students, and practitioners who seek to advance their modelling and simulation work. The book also will serve as a reference, informing research communities of the potential of hybrid models that combine simulation with disciplinary research artefacts, methods, and approaches.

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