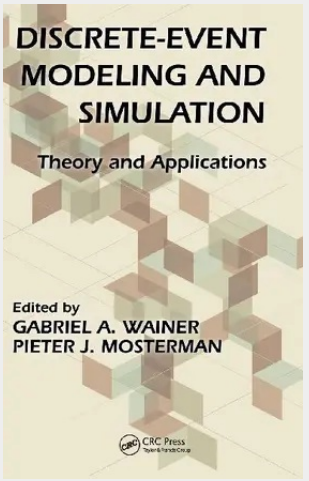
Wainer / Mosterman

Discrete-Event Modeling and Simulation

Theory and Applications



Collecting the work of the foremost scientists in the field, Discrete-Event Modeling and Simulation: Theory and Applications presents the state of the art in modeling discrete-event systems using the discrete-event system specification (DEVS) approach. It introduces the latest advances, recent extensions of formal techniques, and real-world examples of various applications. The book covers many topics that pertain to several layers of the modeling and simulation architecture. It discusses DEVS model development support and the interaction of DEVS with other methodologies. It describes different forms of simulation supported by DEVS, the use of real-time DEVS simulation, the relationship between DEVS and graph transformation, the influence of DEVS variants on simulation performance, and interoperability and composability with emphasis on DEVS standardization. The text also examines extensions to DEVS, new formalisms, and abstractions of DEVS models as well as the theory and analysis behind real-world system identification and control. To support the generation and search of optimal models of a system, a framework is developed based on the system entity structure and its transformation to DEVS simulation models. In addition, the book explores numerous interesting examples that illustrate the use of DEVS to build successful applications, including optical network-on-chip, construction/building design, process control, workflow systems, and environmental models. A one-stop resource on advances in DEVS theory, applications, and methodology, this volume offers a sampling of the best research in the area, a broad picture of the DEVS landscape, and trend-setting applications enabled by the DEVS approach. It provides the basis for future research discoveries and encourages the development of new applications.

Collecting the work of the foremost scientists in the field, this book presents the state of the art in modeling discrete-event systems using the discrete-event system specification (DEVS) approach. It introduces the advances, extensions of formal techniques, and real-world examples of various applications, including optical network-on-chip, construction/building design, process control, workflow systems, and environmental models. The book employs DEVS as a unifying framework for computational modeling and as a formal foundation for model-driven engineering. It covers DEVS standardization as well as the theory of discrete-event modeling and simulation.

186,00 €
186,00 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781420072334
Medium: Buch
ISBN: 978-1-4200-7233-4
Verlag: CRC Press
Erscheinungstermin: 10.12.2010
Sprache(n): Englisch
Auflage: 1. Auflage 2010
Serie: Computational Analysis, Synthesis, and Design of Dynamic Systems
Produktform: Gebunden
Gewicht: 1150 g
Seiten: 534
Format (B x H): 161 x 240 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)