Hahanov

Cyber Physical Computing for IoT-driven Services

This book presents the cyber culture of micro, macro, cosmological, and virtual computing. The book shows how these work to formulate, explain, and predict the current processes and phenomena monitoring and controlling technology in the physical and virtual space.The authors posit a basic proposal to transform description of the function truth table and structure adjacency matrix to a qubit vector that focuses on memory-driven computing based on logic parallel operations performance. The authors offer a metric for the measurement of processes and phenomena in a cyberspace, and also the architecture of logic associative computing for decision-making and big data analysis.The book outlines an innovative theory and practice of design, test, simulation, and diagnosis of digital systems based on the use of a qubit coverage-vector to describe the functional components and structures. Authors provide a description of the technology for SoC HDL-model diagnosis, based on Test Assertion Blocks Activated Graph. Examples of cyber-physical systems for digital monitoring and cloud management of social objects and transport are proposed. A presented automaton model of cosmological computing explains the cyclical and harmonious evolution of matter-energy essence, and also a space-time form of the Universe.

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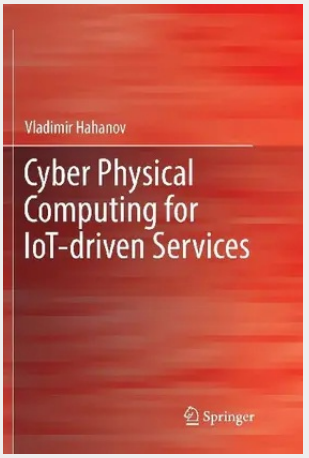

93,08 €
86,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783319854946
Medium: Buch
ISBN: 978-3-319-85494-6
Verlag: Birkhäuser
Erscheinungstermin: 04.06.2019
Sprache(n): Englisch
Auflage: Softcover Nachdruck of the original 1. Auflage 2018
Produktform: Kartoniert
Gewicht: 446 g
Seiten: 279
Format (B x H): 155 x 235 mm

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