| | | |
|---|---|---|
| 1. | Record Nr. | UNINA9910299240303321 |
| | Titolo | Formal Modeling and Verification of Cyber-Physical Systems [[electronic resource] ] : 1st International Summer School on Methods and Tools for the Design of Digital Systems, Bremen, Germany, September 2015 / / edited by Rolf Drechsler, Ulrich Kühne |
| | Pubbl/distr/stampa | Wiesbaden : , : Springer Fachmedien Wiesbaden : , : Imprint : Springer Vieweg, , 2015 |
| | ISBN | 3-658-09994-1 |
| | Edizione | [1st ed. 2015.] |
| | Descrizione fisica | 1 online resource (324 p.) |
| | Disciplina | 003.3 <br> 004 <br> 621.3815 <br> 629.1 <br> 629.8 |
| | Soggetti | Architecture, Computer <br> Computer hardware <br> Computer simulation <br> Electronic circuits <br> Control engineering <br> Robotics <br> Mechatronics <br> Aerospace engineering <br> Astronautics <br> Computer System Implementation <br> Computer Hardware <br> Simulation and Modeling <br> Circuits and Systems <br> Control, Robotics, Mechatronics <br> Aerospace Technology and Astronautics |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Note generali | Description based upon print version of record. |
| | Nota di bibliografia | Includes bibliographical references at the end of each chapters and index. |

| | |
|---|---|
| Nota di contenuto | Preface -- Verification of Embedded Real-time Systems -- MARTE/CCSL for Modeling Cyber-Physical Systems -- An Introduction to Hybrid Automata, Numerical Simulation and Reachability Analysis -- Model Checking and Model-Based Testing in the Railway Domain -- Modeling Unknown Values in Test and Verification -- Specification of Parametric Monitors: Quantified Event Automata versus Rule Systems -- Advances in Design Automation Techniques for Digital-Microfluidic Biochips -- Intuitive Interaction with Robots: Technical Approaches and Challenges -- Physical Safety in Robotics. |
| Sommario/riassunto | This book presents the lecture notes of the 1st Summer School on Methods and Tools for the Design of Digital Systems, 2015, held in Bremen, Germany. The topic of the summer school was devoted to modeling and verification of cyber-physical systems. This covers several aspects of the field, including hybrid systems and model checking, as well as applications in robotics and aerospace systems. The main chapters have been written by leading scientists, who present their field of research, each providing references to introductory material as well as latest scientific advances and future research directions. This is complemented by short papers submitted by the participating PhD students. The Contents - Preface - Verification of Embedded Real-time Systems - MARTE/CCSL for Modeling Cyber-Physical Systems - An Introduction to Hybrid Automata, Numerical Simulation and Reachability Analysis - Model Checking and Model-Based Testing in the Railway Domain - Modeling Unknown Values in Test and Verification - Specification of Parametric Monitors – Quantified Event Automata versus Rule Systems - Advances in Design Automation Techniques for Digital-Microfluidic Biochips - Intuitive Interaction with Robots – Technical Approaches and Challenges - Physical Safety in Robotics The Target Groups - Students and PhD students of computer science - Scientists and lecturers in computer science The Editors Rolf Drechsler is the head of the Group of Computer Architecture at the University of Bremen, Germany. Since 2011 he is also the director of the Cyber-Physical Systems group at the German Research Center for Artificial Intelligence (DFKI). His research interests include the development and design of data structures and algorithms with a focus on circuit and system design. Ulrich Kühne is working as research associate and scientific coordinator of the Graduate School System Design at the University of Bremen. His research interests are in hardware design and verification of hybrid systems. |