1. Record Nr. UNINA990002564500403321

Autore	Berkovitz, Leonard David
Titolo	Optimal Control Theory / L.D. Berkovitz
Pubbl/distr/stampa	New York : Springer Verlag, 1974
ISBN	038790106X
Descrizione fisica	ix, 304 p. ; 25 cm
Collana	Applied mathematical sciences ; 12
Disciplina	629 510
Locazione	MAS
Collocazione	MXVI-C-29 MXVI-C-35
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNISA996464383003316

Autore	Taha Walid <1972->
Titolo	Cyber-physical systems : a model-based approach / / Walid M. Taha, Abd-Elhamid M. Taha, Johan Thunberg
Pubbl/distr/stampa	Springer Nature, 2021 Cham, Switzerland : , : Springer Nature Switzerland AG : , : imprint : Springer, , [2021] ©2021
ISBN	3-030-36071-7
Descrizione fisica	1 online resource (xxii, 187 pages) : illustrations; digital, PDF file(s)
Disciplina	004.6
Soggetti	Computer organization Computer engineering Internet of things Embedded computer systems Computer simulation Control engineering Robotics Mechatronics Computer Systems Organization and Communication Networks Cyber-physical systems, IoT Simulation and Modeling Control, Robotics, Mechatronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I: Core Concepts -- 1. What is a Cyber-Physical System? -- 2. Modeling Physical Systems -- 3. Hybrid Systems -- 4. Control Theory -- 5. Modeling Computational Systems -- 6. Coordinate Transformation (Robot Arm) -- Part II: Selected Topics -- 7. Game Theory -- 8. Communications -- 9. Sensing and Actuation -- Part III: Appendix -- A. Acumen Reference Manual -- Index.
Sommario/riassunto	In this concise yet comprehensive Open Access textbook, future inventors are introduced to the key concepts of Cyber-Physical Systems

(CPS). Using modeling as a way to develop deeper understanding of the computational and physical components of these systems, one can express new designs in a way that facilitates their simulation, visualization, and analysis. Concepts are introduced in a cross-disciplinary way. Leveraging hybrid (continuous/discrete) systems as a unifying framework and Acumen as a modeling environment, the book bridges the conceptual gap in modeling skills needed for physical systems on the one hand and computational systems on the other. In doing so, the book gives the reader the modeling and design skills they need to build smart, IT-enabled products. Starting with a look at various examples and characteristics of Cyber-Physical Systems, the book progresses to explain how the area brings together several previously distinct ones such as Embedded Systems, Control Theory, and Mechatronics. Featuring a simulation-based project that focuses on a robotics problem (how to design a robot that can play ping-pong) as a useful example of a CPS domain, Cyber-Physical Systems: A Model-Based Approach demonstrates the intimate coupling between cyber and physical components, and how designing robots reveals several non-trivial control problems, significant embedded and real-time computation requirements, and a need to consider issues of communication and preconceptions.