

| | |
|-------------------------|---|
| 1. Record Nr. | UNINA9910963497403321 |
| Autore | Mahfouf Mahdi |
| Titolo | Intelligent systems modeling and decision support in bioengineering / / Mahdi Mahfouf |
| Pubbl/distr/stampa | Boston, : Artech House, c2006 |
| ISBN | 9781580539999 1580539998 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (355 p.) |
| Collana | Artech House engineering in medicine & biology series |
| Disciplina | 610.28 |
| Soggetti | Artificial intelligence - Medical applications Intelligent control systems Fuzzy systems in medicine Biomedical engineering - Data processing |
| 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 and index. |
| Nota di contenuto | Intelligent Systems Modeling and Decision Support in Bioengineering; Contents v; Preface xi; Chapter 1 Introduction 1; Chapter 2 A Survey on the Utilization of Fuzzy Logic-Based Technologies in Medicine and Healthcare 9; Chapter 3 Feedback Control of Muscle Relaxation and Unconsciousness Using Predictive Control 45; Chapter 4 A New Generic Approach to Model Reduction for Complex Physiologically Based Drug Models 85; Chapter 5 A Hybrid System's Approach to Modeling and Control of Unconsciousness 129; Chapter 6 Neural-Fuzzy Modeling and Feedback Control in Anesthesia 173 Chapter 7 Intelligent Modeling and Decision Support in the General Intensive Care Unit 215Chapter 8 Hybrid Modeling of Healthy Subjects Experiencing Physical Workload 259; Chapter 9 Physiological Model Extension and Model Exploitation Via Real-Time Fuzzy Control 293; Chapter 10 Conclusion 325; About the Author 335; Index 337 |
| Sommario/riassunto | Intelligent systems try to achieve, through the use of computers, what we associate with intelligence - flexible, learning and adaptive activity like we find in the human brain. For the first time, this groundbreaking resource provides a detailed understanding of the analysis, design, and application of new intelligent systems in the biomedical industry. The |

book covers the three major areas of application in biomedicine, including the modeling and control in human anaesthesia, decision support for critically ill patients in intensive care units, and modeling of humans who are subjected to physiological stress. The culmination of more than 18 years of research, this cutting-edge reference offers practical modeling and control guidance by presenting a combination of simulations, real-time experiments, and actual patient data.
