Record Nr. UNINA9910133842303321 Autore Hudson D. L. (Donna L.) Titolo Neural networks and artificial intelligence for biomedical engineering / / Donna L. Hudson, Maurice E. Cohen Pubbl/distr/stampa New York: ,: Institute of Electrical and Electronics Engineers, , c2000 [Piscatagay, New Jersey]:,: IEEE Xplore,, [1999] Descrizione fisica 1 PDF (xxiii, 306 pages): illustrations Collana IEEE press series on biomedical engineering;; 3 Altri autori (Persone) CohenM. E (Maurice E.) Disciplina 610/.285/63 Soggetti Artificial intelligence - Medical applications Neural networks (Computer science) - Computer simulation Expert systems (Computer science) Biomedical engineering Neural Networks, Computer Biomedical Engineering **Expert Systems** Artificial Intelligence Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface. Acknowledgments. Overview. NEURAL NETWORKS. Foundations of Neural Networks. Classes of Neural Networks. Classification Networks and Learning. Supervised Learning. Unsupervised Learning. Design Issues, Comparative Analysis, Validation and Evaluation. ARTIFICIAL INTELLIGENCE. Foundation of Computer-Assisted Decision Making. Knowledge Representation. Knowledge Acquisition. Reasoning Methodologies. Validation and Evaluation. ALTERNATIVE APPROACHES. Genetic Algorithms. Probabilistic Systems. Fuzzy Systems. Hybrid Systems. HyperMerge, a Hybird Expert System. Future Perspectives. Index. About the Authors. Sommario/riassunto Using examples drawn from biomedicine and biomedical engineering, this essential reference book brings you comprehensive coverage of all the major techniques currently available to build computer-assisted decision support systems. You will find practical solutions for

biomedicine based on current theory and applications of neural

networks, artificial intelligence, and other methods for the development of decision aids, including hybrid systems. Neural Networks and Artificial Intelligence for Biomedical Engineering offers students and scientists of biomedical engineering, biomedical informatics, and medical artificial intelligence a deeper understanding of the powerful techniques now in use with a wide range of biomedical applications. Highlighted topics include: . Types of neural networks and neural network algorithms. Knowledge representation, knowledge acquisition, and reasoning methodologies. Chaotic analysis of biomedical time series. Genetic algorithms. Probability-based systems and fuzzy systems. Evaluation and validation of decision support aids. An Instructor Support FTP site is available from the Wiley editorial department: ftp://ftp.ieee.org/uploads/press/hudson.