Record Nr. UNINA9910144157703321 Autore Pena Reyes Carlos Andres Titolo Coevolutionary Fuzzy Modeling / / edited by Carlos Andrés Peña-Reyes Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, Pubbl/distr/stampa 2004 3-540-30118-6 **ISBN** Edizione [1st ed. 2004.] Descrizione fisica 1 online resource (XIV, 134 p.) Collana Lecture Notes in Computer Science, , 0302-9743 ; ; 3204 Disciplina 511.3223 Soggetti Computers Mathematical logic Artificial intelligence Computation by Abstract Devices Mathematical Logic and Formal Languages Artificial Intelligence Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Bibliographic Level Mode of Issuance: Monograph Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto 1 Introduction -- 2 Evolutionary Fuzzy Modeling -- 3 Coevolutionary Fuzzy Modeling -- 4 Breast Cancer Diagnosis by Fuzzy CoCo -- 5 Analyzing Fuzzy CoCo -- 6 Extensions of the Methodology -- 7 Conclusions and Future Work. Sommario/riassunto Building on fuzzy logic and evolutionary computing, this book introduces fuzzy cooperative coevolution as a novel approach to systems design, conductive to explaining human decision process. Fuzzy cooperative coevolution is a methodology for constructing systems able to accurately predict the outcome of a decision-making process, while providing an understandable explanation of the underlying reasoning. The central contribution of this work is the use of an advanced evolutionary technique, cooperative coevolution, for dealing with the simultaneous design of connective and operational parameters. Cooperative coevolution overcomes several limitations exhibited by other standard evolutionary approaches. The applicability of fuzzy cooperative coevolution is validated by modeling the decision

processes of three real-world problems, an iris data benchmark

problem and two problems from breast cancer diagnosis.