Studies in Fuzziness and Soft Computing

Marie-Jeanne Lesot · Christophe Marsala *Editors*

Fuzzy Approaches for Soft Computing and Approximate Reasoning: Theories and Applications

Dedicated to Bernadette Bouchon-Meunier

This book gathers cutting-edge papers in the area of Computational Intelligence, presented by specialists, and covering all major trends in the research community in order to provide readers with a rich primer. It presents an overview of various soft computing topics and approximate reasoning-based approaches, both from theoretical and applied perspectives. Numerous topics are covered: fundamentals aspects of fuzzy sets theory, reasoning approaches (interpolative, analogical, similarity-based), decision and optimization theory, fuzzy databases, soft machine learning, summarization, interpretability and XAI. Moreover, several application-based papers are included, e.g. on image processing, semantic web and intelligent tutoring systems. This book is dedicated to Bernadette Bouchon-Meunier in honor of her achievements in Computational Intelligence, which, throughout her career, have included profuse and diverse collaborations, both thematically and geographically.

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