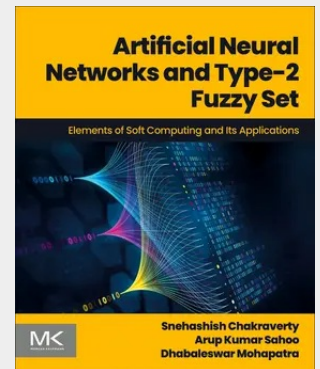


Artificial Neural Networks and Type-2 Fuzzy Set

Soft computing is an emerging discipline which aims to exploit tolerance for imprecision, approximate reasoning, and uncertainty to achieve robustness, tractability, and cost effectiveness for building intelligent machines. Soft computing methodologies include neural networks, fuzzy sets, genetic algorithms, Bayesian networks, and rough sets, among others. In this regard, neural networks are widely used for modeling dynamic solvers, classification of data, and prediction of solutions, whereas fuzzy sets provide a natural framework for dealing with uncertainty. Artificial Neural Networks and Type-2 Fuzzy Set: Elements of Soft Computing and Its Applications covers the fundamental concepts and the latest research on variants of Artificial Neural Networks (ANN), including scientific machine learning and Type-2 Fuzzy Set (T2FS). In addition, the book also covers different applications for solving real-world problems along with various examples and case studies. It may be noted that quite a bit of research has been done on ANN and Fuzzy Set theory/ Fuzzy logic. However, Artificial Neural Networks and Type-2 Fuzzy Set is the first book to cover the use of ANN and fuzzy set theory with regards to Type-2 Fuzzy Set in static and dynamic problems in one place. Artificial Neural Networks and Type-2 Fuzzy Sets are two of the most widely used computational intelligence techniques for solving complex problems in various domains. Both ANN and T2FS have unique characteristics that make them suitable for different types of problems. This book provides the reader with in-depth understanding of how to apply these computational intelligence techniques in various fields of science and engineering in general and static and dynamic problems in particular. Further, for validation purposes of the ANN and fuzzy models, the obtained solutions of each model in the book is compared with already existing solutions that have been obtained with numerical or analytical methods.



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