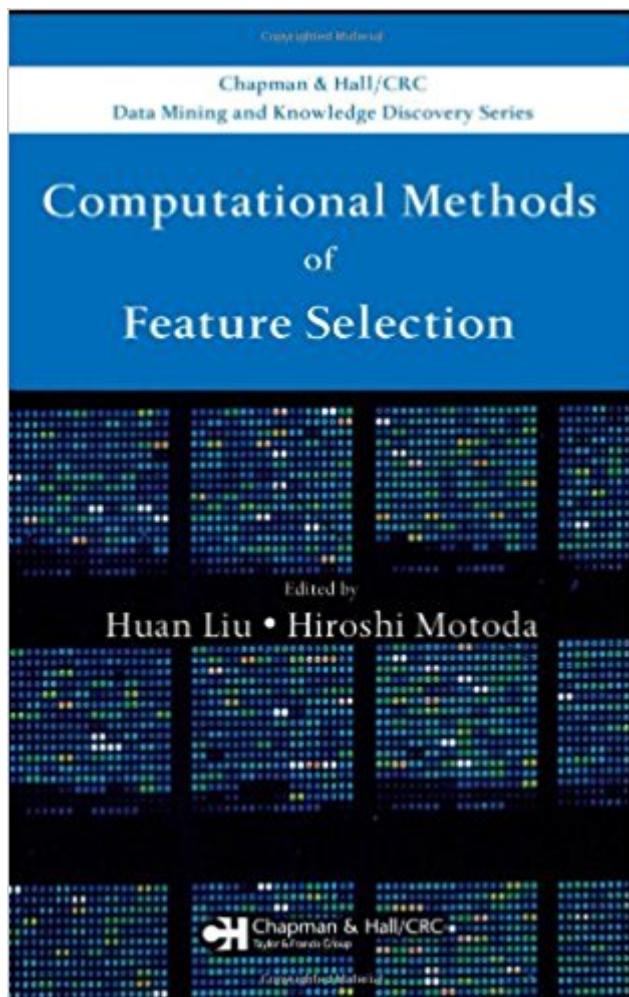


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Computational Methods Of Feature Selection (Chapman & Hall/CRC Data Mining And Knowledge Discovery Series)



Synopsis

Due to increasing demands for dimensionality reduction, research on feature selection has deeply and widely expanded into many fields, including computational statistics, pattern recognition, machine learning, data mining, and knowledge discovery. Highlighting current research issues, Computational Methods of Feature Selection introduces the basic concepts and principles, state-of-the-art algorithms, and novel applications of this tool. The book begins by exploring unsupervised, randomized, and causal feature selection. It then reports on some recent results of empowering feature selection, including active feature selection, decision-border estimate, the use of ensembles with independent probes, and incremental feature selection. This is followed by discussions of weighting and local methods, such as the ReliefF family, k-means clustering, local feature relevance, and a new interpretation of Relief. The book subsequently covers text classification, a new feature selection score, and both constraint-guided and aggressive feature selection. The final section examines applications of feature selection in bioinformatics, including feature construction as well as redundancy-, ensemble-, and penalty-based feature selection. Through a clear, concise, and coherent presentation of topics, this volume systematically covers the key concepts, underlying principles, and inventive applications of feature selection, illustrating how this powerful tool can efficiently harness massive, high-dimensional data and turn it into valuable, reliable information.

Book Information

Series: Chapman & Hall/CRC Data Mining and Knowledge Discovery Series

Hardcover: 440 pages

Publisher: Chapman and Hall/CRC (October 29, 2007)

Language: English

ISBN-10: 1584888784

ISBN-13: 978-1584888789

Product Dimensions: 6.5 x 1.1 x 9.3 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

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