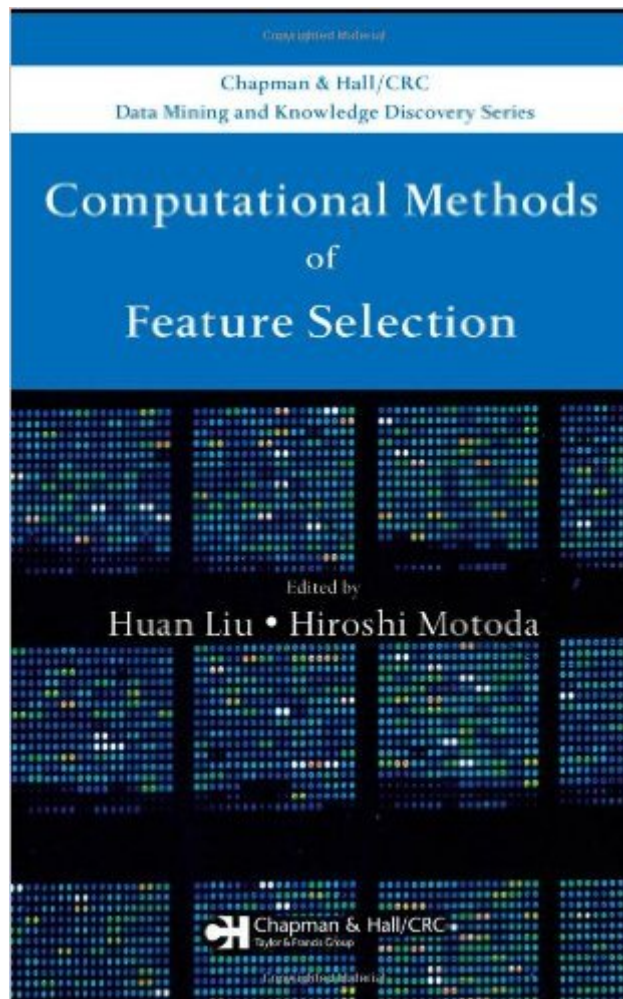


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Computational Methods Of Feature Selection (Chapman & Hall/CRC Data Mining And Knowledge Discovery Series)



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.

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Table of Contents
PREFACE
INTRODUCTION AND BACKGROUND
LESS IS MORE
Huan Liu and Hiroshi Motoda
Background and Basics
Supervised, Unsupervised, and Semi-Supervised Feature Selection
Key Contributions and Organization of the Book
Looking Ahead
UNSUPERVISED FEATURE SELECTION
Jennifer G. Dy
Introduction
Clustering
Feature Selection
Feature Selection for Unlabeled Data
Local Approaches
Summary
RANDOMIZED FEATURE SELECTION
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