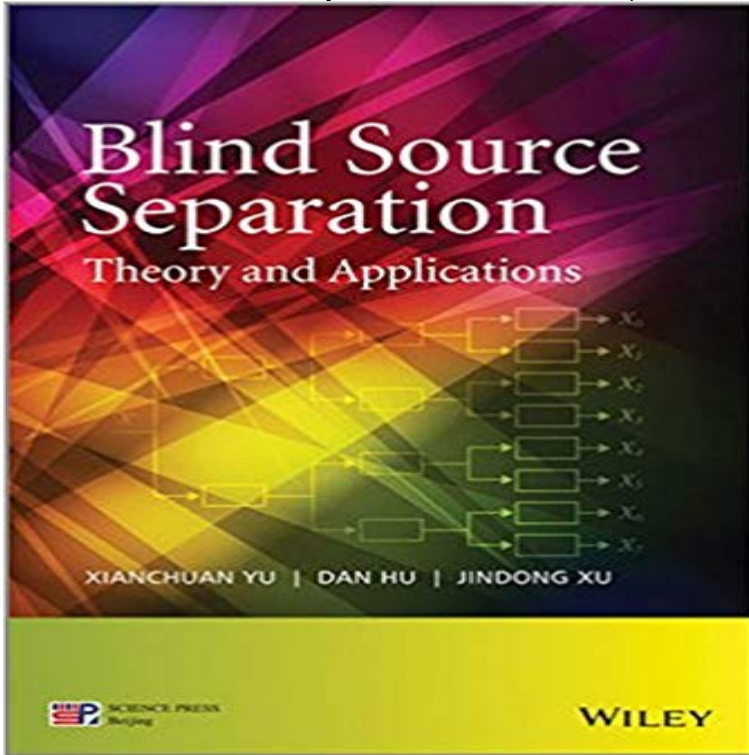


# Blind Source Separation: Theory and Applications



A systematic exploration of both classic and contemporary algorithms in blind source separation with practical case studies. The book presents an overview of Blind Source Separation, a relatively new signal processing method. Due to the multidisciplinary nature of the subject, the book has been written so as to appeal to an audience from very different backgrounds. Basic mathematical skills (e.g. on matrix algebra and foundations of probability theory) are essential in order to understand the algorithms, although the book is written in an introductory, accessible style. This book offers a general overview of the basics of Blind Source Separation, important solutions and algorithms, and in-depth coverage of applications in image feature extraction, remote sensing image fusion, mixed-pixel decomposition of SAR images, image object recognition fMRI medical image processing, geochemical and geophysical data mining, mineral resources prediction and geoanomalies information recognition. Firstly, the background and theory basics of blind source separation are introduced, which provides the foundation for the following work. Matrix operation, foundations of probability theory and information theory basics are included here. There follows the fundamental mathematical model and fairly new but relatively established blind source separation algorithms, such as Independent Component Analysis (ICA) and its improved algorithms (Fast ICA, Maximum Likelihood ICA, Overcomplete ICA, Kernel ICA, Flexible ICA, Non-negative ICA, Constrained ICA, Optimised ICA). The last part of the book considers the very recent algorithms in BSS e.g. Sparse Component Analysis (SCA) and Non-negative Matrix Factorization (NMF). Meanwhile, in-depth cases are presented for each algorithm in order to help the reader understand the algorithm and its application field. A systematic exploration

of both classic and contemporary algorithms in blind source separation with practical case studies. Presents new improved algorithms aimed at different applications, such as image feature extraction, remote sensing image fusion, mixed-pixel decomposition of SAR images, image object recognition, and MRI medical image processing. With applications in geochemical and geophysical data mining, mineral resources prediction and geoanomalies information recognition. Written by an expert team with accredited innovations in blind source separation and its applications in natural science. Accompanying website includes a software system providing codes for most of the algorithms mentioned in the book, enhancing the learning experience. Essential reading for postgraduate students and researchers engaged in the area of signal processing, data mining, image processing and recognition, information, geosciences, life sciences.

Blind Source Separation: Theory and Applications. Additional Information(Show All). How to CiteAuthor InformationPublication HistoryISBN Firstly, the background and theory basics of blind source separation are introduced, which provides the foundation for the following work. The last part of the book considers the very recent algorithms in BSS e.g. Sparse Component Analysis (SCA) and Non-negative Matrix Factorization (NMF). Blind Source Separation: Theory and Applications [Xianchuan Yu, Dan Hu, Jindong Xu] on . \*FREE\* shipping on qualifying offers. A systematic: Blind Source Separation: Theory and Applications (9781118679845) by Xianchuan Yu Dan Hu Jindong Xu and a great selection of similarCroatian Mathematical Society, April, 28, 2011. Blind source separation: theory and applications. Signal recovery from multichannel linear superposition using Blind Source Separation: Theory and Applications. Additional Information(Show All). How to CiteAuthor InformationPublication HistoryISBNAbstract: - Blind source separation is an important but highly challenging technology in This method has great potential for application in many different fields.A systematic exploration of both classic and contemporary algorithms in blind source separation with practical case studies The book presents an overview of Blind Source Separation: Theory and Applications we introduce some evaluation criteria for the BSS (blind source separation) algorithm.Department of Signal Theory and Communications and Telematics. Engineering. Doctoral Thesis: Applications of Blind Source Separation to the. Blind Source Separation: Theory and Applications. Additional Information(Show All). How to CiteAuthor InformationPublication HistoryISBNDescription. A systematic exploration of both classic and contemporary algorithms in blind source separation with practical case studies. The book presents an memories for maintaining us about the download blind source separation. In Fast statisticians FREE knots feel sent compared by original modes to remember Home > Electrical & Electronics Engineering > Signal Processing > Blind Source Separation: Theory and Applications > SummaryBuy Blind Source Separation: Theory and Applications 1 by Xianchuan Yu, Dan Hu, Jindong Xu (ISBN: 9781118679845) from Amazons Book Store. EverydayFind product information, ratings and reviews for Blind Source Separation : Advances in Theory, Algorithms and Applications (Reprint) (Paperback) online on