BLIND SOURCE SEPARATION WITH NEURAL NETWORKS: DEMIXING SOURCES FROM MIXTURES WITH DIFFERENT PARAMETERS

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Abstract

The goal of this research is to develop multilayer neural network topology for Independent Component Analysis (ICA) which maximizes the entropy of the outputs with logistic transfer function. The purpose of the hidden layers is: *a)* whitening of the input data for yielding good separation results; *b)* separation of the independent sources (components); c) estimation of the basis vectors. The performed simulations were based on different choice of source signals, noise and parameters of the mixing matrices in order to study the ability of the NN to solve the blind source separation problem. We compare the results with those received by Karhunen-Oja nonlinear PCA algorithm.

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