Department of Statistics

MASTER'S THESIS PRESENTATION

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Non-Gaussian Component Analysis

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ABSTRACT

Non-Gaussian Component Analysis (NGCA) is an algorithm used in multidimensional data for non-Gaussian subspace identification. Unlike Independent Component Analysis (ICA), NGCA allows extracting independent or dependent non-Gaussian components with higher dimensions of Gaussian noise. NGCA projects out Gaussian part and combines FastICA and PCA steps. The non-Gaussianity measures used for FastICA and NGCA algorithms include nonlinear index function as well as a set of different functions. Comparative study of NGCA, ICA and PCA is carried out in this study with the main focus on NGCA approach. Simulated datasets and real data examples are analyzed. The examples show that NGCA works comparably or better than FastICA and PCA for non-Gaussian subspace recovering, while NGCA combined with FastICA has the most stable and accurate results for source separation problem.

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