

UW CENTER FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE

GRADUATE SEMINAR SERIES

On Source Separation Based on Time-Frequency Approach

Speaker: Farook Sattar

Date: April 11, 2012

Time: 4:00 pm – 4:30 pm

Place: E5 (5128) Refreshments will be served

Abstract :

Blind source separation (BSS) deals with the problem of recovering unknown signals from several observed mixtures. Usually, these mixtures are obtained as the output of a set of sensors, whereby, each sensor collects a different combination of the source signals. BSS has many applications, including the separation of individual speech signals from a mixture of simultaneous speakers, the elimination of cross-talk between horizontally and vertically polarized microwave communications transmissions, and the separation of multiple telephone signals at a base station. Other applications include radar, acoustics, and biomedical engineering. This presentation will mainly address the time-frequency (TF) based approach for BSS which seems to be effective in dealing with nonstationary source signals, i.e., signals whose spectral contents vary with time. TF based techniques use the joint time-frequency characteristics of the sources in order to separate them. Various examples, using synthetic as well as real-data will be shown to demonstrate the validity and efficiency of the proposed methods.

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