Blind Deconvolution of Sources in Fourier Space Based on Generalized Laplace Distribution

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Abstract

An approach to multi-channel blind deconvolution is developed, which uses an adaptive filter that performs blind source separation in the Fourier space. The approach keeps (during the learning process) the same permutation and provides appropriate scaling of components for all frequency bins in the frequency space. Experiments indicate that Generalized Laplace Distribution can be used effectively to blind deconvolution of convolution mixtures of sources in Fourier space compared

Blind Signal Separation Using an Adaptive Generalized Continuous Distribution

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Abstract

In this paper, we present an algorithm for the problem of independent component analysis (ICA) which can separate mixtures of sub- and super- Gaussian probability density distributions using a generalized continuous distribution source model. We use neural network representation to model the mixer and demixer respectively, and show how the parameters of the demixer respectively, and show how the parameters of the demixer can be adapted using a gradient descent algorithm incorporating the natural gradient extension. We also present a learning method for the unknown parameters of the generalized exponential source model. The nonlinear function in ICA algorithem is self-adaptive and is controlled by the shape parameters of generalized exponential density model. Computer simulation results confirm the validity and high performance of the proposed algorithm.

Real-time aircraft turnaround operations manager

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Abstract

Aircraft turnaround operations are the activities conducted to prepare an inbound aircraft at an airport for a following outbound flight that is scheduled for the same aircraft. The activities of aircraft turnaround operations include both the inbound and outbound exchanges of passengers, crew, catering services, cargo and baggage handling. Hence, appears the importance of following up on all activities done during the aircraft turnaround stage to deliver the true picture to the airline operation control centre (OCC) automatically. This enables the OCC to take quick and proper decisions regarding how to face any obstacles to flight punctuality, determine responsibilities and evaluate performances in regard to all activities. These control and evaluation activities occur, at the present, using manual methods and telephone communications, which lead to unreliable data and delays. The data become more doubtful due to interference of the human factor and the necessity to monitor flights preparation. Our solution to these problems is to present the airline flight preparation management process during the aircraft turnaround and design and implement a rule-based system called Flight Activities Progressions System that is used to manage and monitor the flights preparation during the turnaround. Mobile computing devices, portable handsets and the wireless network technology General Packet Radio Service are used to implement the real-time system for an airline. The Project Evaluation and Review Technique (PERT) and Critical Path Method are modelled in the system. The goals of using PERT are to evaluate and improve the efficiency of airline operational procedures and to improve the efficiency of airline ground activities allocation. The system implementation results indicate that real-time operation can potentially reduce delays occurring from airline operations and optimise the aircraft ground stop time.

The suggested system for health insurance Application based on Smart Cards

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Abstract

This paper concentrates on designing a system for Health insurance using smart card technology .The system is called HISS (Health insurance system using smart card). As we will see the system is web based application based on central database ,uses smart card for two reasons first, as a data carrier for patient and professionals. Second reason is for authentication purposes. There are some figures that describe system architecture and processes then each component well be explained.

Automatic Image Registration Technique of Remote Sensing Images

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Abstract

Image registration is a crucial step in most image processing tasks for which the final result is achieved from a combination of various resources. Automatic registration of remote-sensing images is a difficult task as it must deal with the intensity changes and variation of scale, rotation and illumination of the images. This paper proposes image registration technique of multi-view, multi-temporal and multi-spectral remote sensing images. Firstly, a preprocessing step is performed by applying median filtering to enhance the images. Secondly, the Steerable Pyramid Transform is adopted to produce multi-resolution levels of reference and sensed images; then, the Scale Invariant Feature Transform (SIFT) is utilized for extracting feature points that can deal with the large variations of scale, rotation and illumination between images .Thirdly, matching the features points by using the Euclidian distance ratio; then removing the false matching pairs using the RANdom SAmple Consensus (RANSAC) algorithm. Finally, the mapping function is obtained by the affine transformation. Quantitative comparisons of our technique with the related techniques show a significant improvement in the presence of large scale, rotation changes, and the intensity changes. The effectiveness of the proposed technique is demonstrated by the experimental results.

Keywords— *Image registration; Steerable Pyramid Transform; SIFT; RANSAC*