



## Guest Editorial: Deep Learning for Visual Information Analytics and Management

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### Abstract

The special issue aims to cover the latest research topics in designing and deploying visual information analytics and management techniques using deep learning. It is intended to serve as a platform for researchers who want to present research in deep learning. The special issue focuses explicitly on deep learning and its application in visual computing and signal processing. It emphasizes on the extent to which Deep Learning can help specialists in understanding and analyzing complex images and signals. The field of Visual Information Analytics and Management is considered in its broadest sense and covers both digital and analog aspects. This involves development of techniques for image analysis, understanding and restoration. Deep learning techniques are effective for visual analytics. Deep learning is a fast growing area and is gaining impetus for application in various fields. Therefore, in this special issue the objective is to publish articles related to deep learning in various problems of visual information analytics and management.

**Keywords:** Deep learning, Visual information, Data analytics, Watermarking.

## Overview of Submissions

Deep learning is a rapidly growing area and has been applied in multiple fields. The use of deep learning for visual information analytics is an interesting and significant research area. Numerous applications based on visual information require deep learning for analytics. This special issue is a collection of research papers addressing these two areas.

There is a total of four articles in the special issue. The submissions received address significant research problems using deep learning and visual information. The articles in the special issue are on the topics like handwriting analysis, digital watermarking, use of visual information for healthcare applications. The research papers contribute significantly to the use of deep learning in visual information analytics.

The first article presents a deep learning-based model for the prediction of personality traits of a person. The authors have presented a novel deep learning model for the analysis of handwriting. The authors have developed a model that can be used for analyzing the hand writing of individuals. This analysis is used for the prediction of personality traits using the Big-Five Model.

The second paper addresses the digital watermarking problem. Digital watermarking is used for copyright protection. The authors present a watermarking method using Dragonfly Optimization Algorithm. The paper presents a watermarking embedding and extraction algorithm using bio inspired optimization algorithm. The authors have compared their results with other existing state of the art methods. The results show that the proposed method outperforms the other methods.

In the third paper the authors have presented a comparative study and selection criteria for segmentation of Brain MRI images. The authors have used Magnetic Resonance Imaging (MRI) images to perform the study. The proposed method finds the best size, initial location and shape of the tumor for performing the thresholding. Active Contour and Otsu methods are compared by the authors to evaluate the proposed method.

In the fourth article the authors have presented an approach for the removal of artifacts in Electrocardiograms using Savitzky-Golay Filter. Electrocardiogram (ECG) are used for the electrical analysis of the human heart activity. The ECG signals tend to get noisy due to the problems during acquisition. The authors have presented different techniques including median filter, wavelets, and Savitzky-Golay Filter. These have proved to be effective in the removal of noise from ECG signals.

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