**ABSRTACT**

Deep Learning has emerged as a new area in machine learning and is applied to a number of signal and image applications.The main purpose of the work presented in this paper, is to apply the concept of a Deep Learning algorithm namely, Convolutional neural networks (CNN) in image classification. The algorithm is tested on various standard datasets, like remote sensing data of aerial images (UC Merced Land Use Dataset) and scene images from SUN database. The performance of the algorithm is evaluated based on the quality metric known as Mean Squared Error (MSE) and classification accuracy. The graphical representation of the experimental results is given on the basis of MSE against the number of training epochs. The experimental result analysis based on the quality metrics and the graphical representation proves that the algorithm (CNN) gives fairly good classification accuracy for all the tested datasets.