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# CONVOLUTIONAL NEURAL NETWORK MODEL IN MACHINE LEARNING METHODS AND COMPUTER VISION FOR IMAGE RECOGNITION: A REVIEW

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## ABSTRACT

Recently, Convolutional Neural Networks (CNNs) are used in variety of areas including image and pattern recognition, speech recognition, biometric embedded vision, food recognition and video analysis for surveillance, industrial robots and autonomous cars. There are a number of reasons that convolutional neural networks (CNNs) are becoming important. Feature extractors are hand designed during traditional models for image recognition. In CNNs, the weights of the convolutional layer being used for feature extraction in addition to the fully connected layer are applied for classification that are determined during the training process. The objective of this paper is to review a few learning machine methods of convolutional neural network (CNNs) in image recognition. Furthermore, current approaches to image recognition make essential use of machine learning methods. Based on twenty five journal that have been review, this paper focusing on the development trend of convolution neural network (CNNs) model due to various learning method in image recognition since 2000s, which is mainly introduced from the aspects of capturing, verification and clustering. Consequently, deep convolutional neural network (DCNNs) have shown much successful in various machine learning and computer vision problem because it significant quality gain at a modest increase of computational requirement. This training method also allows models that are composed of multiple processing layers to learn representation of data with multiple levels of abstraction.

*Keywords: Neural Network, Image Recognition, Learning Machine, Computer Vision*