Deep Columnar Convolutional Neural Network

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Abstract

Recent developments in the field of deep learning have shown that convolutional networks with several layers can approach human level accuracy in tasks such as handwritten digit classification and object recognition. It is observed that the state-of-the-art performance is obtained from model ensembles, where several models are trained on the same data and their predictions probabilities are averaged or voted on. Here, the proposed model is a single deep and wide neural network architecture that offers near state-of-the-art performance on various image classification challenges, such as the MNIST dataset and the CIFAR-10 and CIFAR-100 datasets. On the competitive MNIST handwritten image classification challenge, the proposed model approaches the near state-of-the-art 35 model ensemble in terms of accuracy. On testing the model on the CIFAR datasets, it is found that the proposed model approaches the performance of the top two ensemble models. The architecture is also analyzed on the SVHN dataset.

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Index Terms

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Keywords
Neural Networks, Convolutional Neural Network, Computer Vision