CONVOLUTIONAL NEURAL NETWORK WITH MULTI-COLUMN CHARACTERISTICS EXTRACTION FOR IMAGE CLASSIFICATION

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Abstract

In the last few decades, the constant growth of digital images, as the main source of information representation for scientific applications, has made image classification a challenging task. To achieve high classification yields, different pattern recognition techniques have been proposed, among which are the deep learning methods that today focus their study on image processing and computer vision. In this approach, the most popular architecture for the image classification task is the convolutional neural network (CNN), a network constructed of multiple layers and where each layer models a receptive field of the visual cortex making it much more effective in artificial vision tasks [1]. This paper proposes a convolutional network architecture with a performance-enhancing approach, a hierarchical structure that is easy to build, adaptive, and easy to train with good performance in image classification tasks.

Keywords

Convolutional neural network, Image classification, Multi-column characteristics extraction