Abstract

Object recognition is the process of identification of an object in an image. There exist various algorithms for the same. Appearance based algorithms have demonstrated good efficiency, however, their performance gets affected adversely in the presence of clutter or when background changes are affected. We hope to overcome this issue by using Convolution Neural Network (CNN) Theorem. The approach is shape based and has been proven to work well under broad range of circumstances: varied lighting conditions, affine transformations, etc. It involves tiling, which is the phenomenon of the use of multiple layers of neurons to process small portions of the image, which are then used to obtain better representations of the image. This allows CNN to be translation-tolerant. The neural elements learn to recognize objects about which they have no previous information, this ‘learning’ mechanism is affected by the fact that representations of the image are learned by the inner layers of the deep architectures of neurons. Unlike RBM and Auto-encoder, which are capable of learning only single global weight matrix layers, the CNN theorem makes use of shared weight in convolution layers, which means that the same filter (weight bank) is used for each pixel in the layer, which reduces the memory
footprint and improves performance.

References

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Index Terms

Computer Science  Networks

Keywords

Recognition, Object, Neural, Features, Dataset, Training, Image