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A Comprehensive Study of Camouflaged Object Detection Using Deep Learning

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Abstract : Object detection is a computer technology that deals with searching through digital images and videos for occurrences of semantic elements of a particular class. It is associated with image processing and computer vision. On top of object detection, we detect camouflage objects within an image using Deep Learning techniques. Deep learning may be a subset of machine learning that's essentially a three-layer neural network Over 6500 images that possess camouflage properties are gathered from various internet sources and divided into 4 categories to compare the result. Those images are labeled and then trained and tested using vgg16 architecture on the jupyter notebook using the TensorFlow platform. The architecture is further customized using Transfer Learning. Methods for transferring information from one or more of these source tasks to increase learning in a related target task are created through transfer learning. The purpose of this transfer of learning methodologies is to aid in the evolution of machine learning to the point where it is as efficient as human learning.

Keywords : deep learning, transfer learning, TensorFlow, camouflage, object detection, architecture, accuracy, model, VGG16
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