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Libyan Landmark Recognition Using Deep Learning

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ABSTRACT

With the increasing of computation power and amount of data, the recent years has seen tremendous advance in artificial intelligent techniques especially in the field of deep learning. Deep learning is revolutionizing several research fields like computer vision, autonomous driving, natural language processing, and speech recognition. In the area of computer vision such as image recognition a class of biologically inspired vision model called convolutional neural network outperformed human performance. To exploit this advance in deep learning, this paper introduce a trained model to identify Libyan landmarks such as Sabratha Theater, Alnaser arch, etc., in digital photos. The learning approach was based on convolutional neural network for image classification. A deep convolutional neural network was built using Keras and TensorFlow framework and trained on labeled dataset of thousand images from a variety of Libyan landmarks. This dataset used to train the network was collected from the internet and using different data augmentation techniques. The model obtained shows a classification accuracy of 99.0 %. This model can be used to develop various applications such as a tourist mobile app or web application, where users can take a photo of a Libyan landmark and upload it to the application, which will use the model to identify the landmark in the photo and shows some information to the user about it.

Keywords: Artificial Intelligence, Deep Learning, Convolutional neural Network, Landmark, Image classification