

Starter Project Writeup

Instructions

Train a neural net to classify images.

Skills demonstrated: convolutional neural networks, data wrangling, image processing.

Project Overview

This is a very simple starter project.

Generated 2D shapes datasets involving circles, rectangles and triangles. There are 1500 shapes in training dataset, 300 shapes in validation dataset and 300 shapes in test dataset. Trained by VGG network with 20 epochs. The model got 100% correct rate on the test dataset.

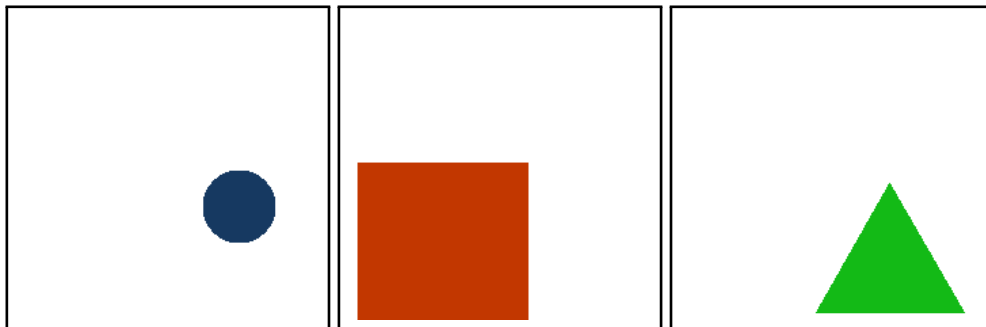


Figure 1: Sample Images

Model summaries

Layer (type)	Output Shape	Param #
vgg16 (Model)	(None, 1000)	138357544
batch_normalization (Batch Normalization)	(None, 1000)	4000
dense (Dense)	(None, 3)	3003
Total params: 138,364,547		
Trainable params: 5,003		
Non-trainable params: 138,359,544		

Optimizer: adam,

Loss function: Sparse Categorical Crossentropy.

Performance

The model was tested on a test dataset involving 300 shape images. It achieved 100% correct rate. The following image shows some sample results.

