

cs577 Assignment 2: Report

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Question 1

Problem statement

image tri-class classification problem

Proposed solution

as asked, use densely connected neural networks to classify the classes.

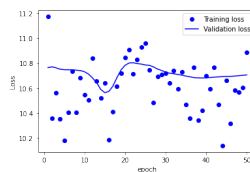
Implementation details

I will use colab to do all the work. The dataset are load from tensorflow.datasets so no extra link. The classes I pick are the first three.

The training image is vectorized and converted to value between 0 and 1, and their labels are already in integers so no further process on it. The tuning process is summarized in the following tables

NN architecture	activation	optimizer	epoch	batch size
(64,64,3)	(sigmoid,sigmoid,softmax)	rmsprop, lr=0.001	10	100
(64 \times 7,3)	(relu,...,relu,softmax)	rmsprop, lr=0.001	75	1024

The loss vs epoch figure are below.



Results and discussion

- train data size: 15000-1500
- validation data size: 1500
- test data size: 3000

No time to edit the code, obviously bugged.