CSE 473 homework 5

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March 5, 2023

1. Neural Network

(a) How many trainable parameters are in the model? It is printed in the terminal.

346373

(b) What is the best training accuracy?

0.75744

(c) What is the best validation accuracy? Is it better than the ones in previous questions?

0.762
This is the first question so it is the best so far

(d) According to the training and validation accuracies, does the model overfit your training data?

The model does not overfit the training data, since the validation accuracy is close to the training data.

2. Simple Convolution Neural Network

(a) How many trainable parameters are in the model? It is printed in the terminal.

8069

(b) What is the best training accuracy?

0.83328

(c) What is the best validation accuracy? Is it better than the ones in previous questions?

0.8268. It is better than the previous accuracies.

(d) According to the training and validation accuracies, does the model overfit your training data?

The training accuracy is slightly greater than the validation accuracy. However, the difference is small so I don't think the model overfit the training data so much

3. Color Normalization

(a) How many trainable parameters are in the model? It is printed in the terminal.

8069

(b) What is the best training accuracy?

0.89064

(c) What is the best validation accuracy? Is it better than the ones in previous questions?

0.8584. It is better than the previous accuracies.

(d) According to the training and validation accuracies, does the model overfit your training data?

The subtraction of the training accuracy and validation is 0.04, which is a big difference. So the model is likely to be overfitting.

4. Deep Convolutional Neural Network

(a) How many trainable parameters are in the model? It is printed in the terminal.

29077

(b) What is the best training accuracy?

0.8944

(c) What is the best validation accuracy? Is it better than the ones in previous questions?

0.8676. It is better than the previous accuracies

(d) According to the training and validation accuracies, does the model overfit your training data?

The subtraction of the training accuracy and validation is 0.02, which is still a big difference. So the model is likely to be overfitting.

5. Data Augmentation

(a) How many trainable parameters are in the model? It is printed in the terminal.

29077

(b) What is the best training accuracy?

0.8688

(c) What is the best validation accuracy? Is it better than the ones in previous questions?

0.874. It is better than the previous accuracies.

(d) According to the training and validation accuracies, does the model overfit your training data?

The model does not overfit the training data, since the validation accuracy is close to the training data.