
Lab 8 README File:

How to Use:

From the zip/7z package:

Unzip all lab8_austin_jonathan.zip and execute tasks in Spyder and Google Colab

Make sure to pip install the proper libraries used at the top of each file

View the program screenshots and “VIDEO” for the following requirements below:

1. CNN - Baseline + Increasing Dropout + Data Augmentation + Batch Normalization + Your own method
2. CNN - Challenge test
3. Game Development – Balloon Flight

Acknowledgments:

GitHub Repository

https://github.com/austinjonathan1/lab8_austin_jonathan.git

Author:

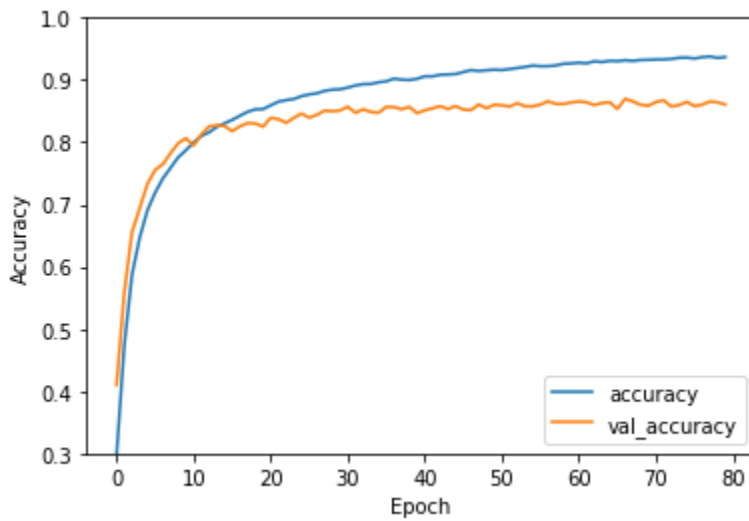
Jonathan Austin <jonathan.austin@sjsu.edu>

1. CNN - Baseline + Increasing Dropout + Data Augmentation + Batch Normalization +
Your own method
 - a. Peak Accuracy: 0.9369%

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782/782 [=====] - 21s 27ms/step - loss: 0.2009 - accuracy: 0.9307 - val_loss: 0.4607 - val_accuracy: 0.8650
Epoch 69/80
782/782 [=====] - 21s 27ms/step - loss: 0.2021 - accuracy: 0.9322 - val_loss: 0.4971 - val_accuracy: 0.8603
Epoch 70/80
782/782 [=====] - 21s 27ms/step - loss: 0.2046 - accuracy: 0.9324 - val_loss: 0.4954 - val_accuracy: 0.8586
Epoch 71/80
782/782 [=====] - 21s 27ms/step - loss: 0.1990 - accuracy: 0.9330 - val_loss: 0.4895 - val_accuracy: 0.8647
Epoch 72/80
782/782 [=====] - 21s 27ms/step - loss: 0.2012 - accuracy: 0.9330 - val_loss: 0.4807 - val_accuracy: 0.8673
Epoch 73/80
782/782 [=====] - 21s 27ms/step - loss: 0.1989 - accuracy: 0.9339 - val_loss: 0.5104 - val_accuracy: 0.8574
Epoch 74/80
782/782 [=====] - 21s 27ms/step - loss: 0.1919 - accuracy: 0.9357 - val_loss: 0.5058 - val_accuracy: 0.8597
Epoch 75/80
782/782 [=====] - 21s 27ms/step - loss: 0.1925 - accuracy: 0.9360 - val_loss: 0.5028 - val_accuracy: 0.8649
Epoch 76/80
782/782 [=====] - 21s 27ms/step - loss: 0.1945 - accuracy: 0.9346 - val_loss: 0.5084 - val_accuracy: 0.8581
Epoch 77/80
782/782 [=====] - 21s 27ms/step - loss: 0.1920 - accuracy: 0.9366 - val_loss: 0.4990 - val_accuracy: 0.8603
Epoch 78/80
782/782 [=====] - 21s 27ms/step - loss: 0.1880 - accuracy: 0.9378 - val_loss: 0.4721 - val_accuracy: 0.8655
Epoch 79/80
782/782 [=====] - 21s 27ms/step - loss: 0.1917 - accuracy: 0.9355 - val_loss: 0.4685 - val_accuracy: 0.8642
Epoch 80/80
782/782 [=====] - 21s 27ms/step - loss: 0.1834 - accuracy: 0.9369 - val_loss: 0.5117 - val_accuracy: 0.8606

```

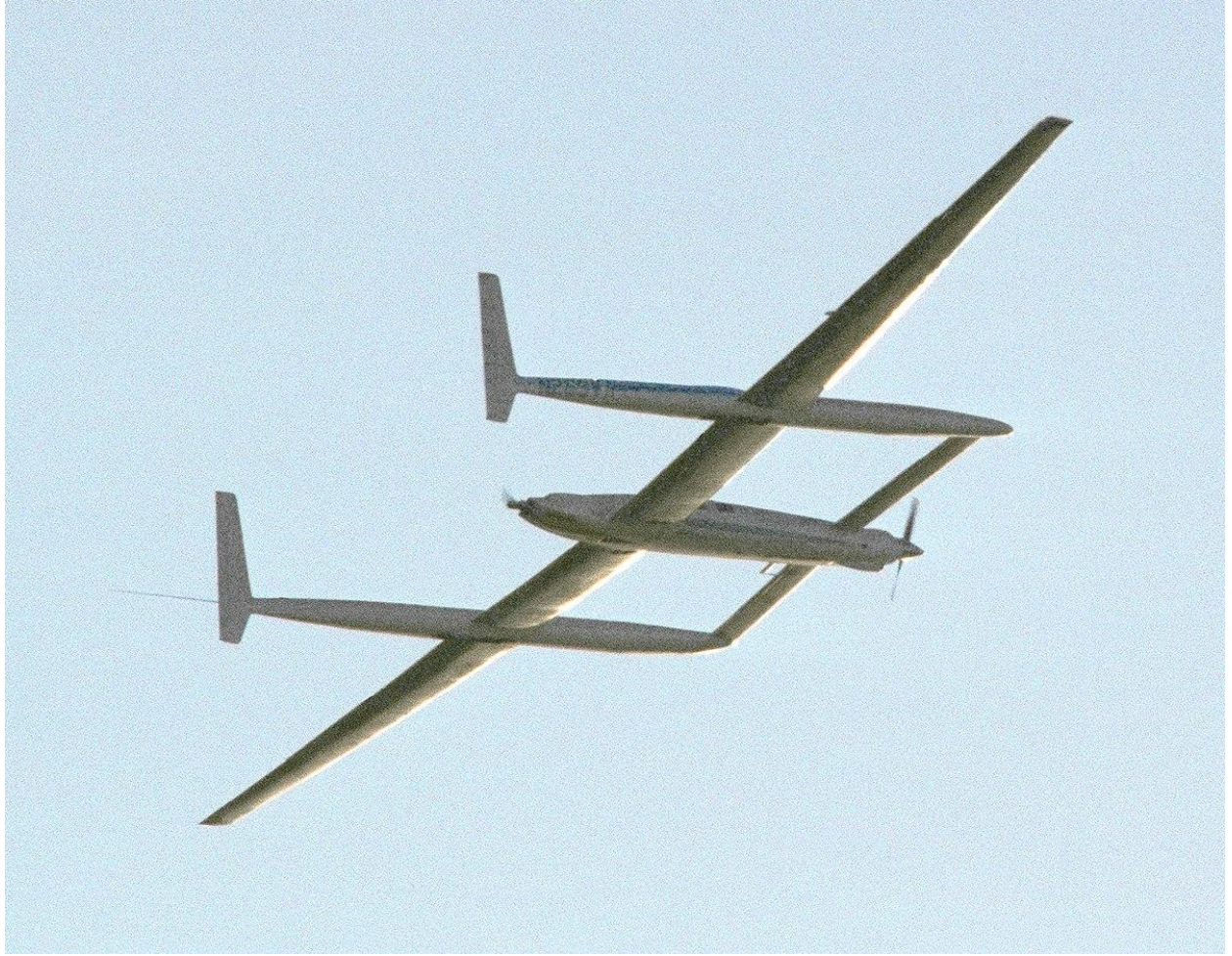


2. CNN - Challenge test

TOI









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26 Downloading data from https://images.all-free-download.com/images/graphiclarge/flying_bird_201952.jpg
16384/14677 [=====] - 0s 0us/step
24576/14677 [=====] - 0s 0us/step
This image most likely belongs to ship with a 23.19 percent confidence.
tf.Tensor(
[0.08534376 0.08533945 0.08534294 0.0853411 0.08534084 0.08534276
0.08534175 0.08534015 0.23192775 0.08533955], shape=(10,), dtype=float32)
Downloading data from https://static.toiimg.com/thumb/msid-67586673,width-1070,height-580,overlay-toi_sw,pt-32,y_pad-40,resizemode-75,imgsiz-3918697/67586673.jpg
65536/60395 [=====] - 0s 1us/step
73728/60395 [=====] - 0s 1us/step
This image most likely belongs to dog with a 23.19 percent confidence.
tf.Tensor(
[0.08534073 0.08534045 0.08534261 0.08535791 0.08534224 0.23191082
0.08534081 0.08534338 0.08534048 0.08534046], shape=(10,), dtype=float32)
Downloading data from https://upload.wikimedia.org/wikipedia/commons/f/f0/White_horse.jpg
221184/216027 [=====] - 0s 0us/step
229376/216027 [=====] - 0s 0us/step
This image most likely belongs to dog with a 23.19 percent confidence.
tf.Tensor(
[0.08534073 0.08534045 0.08534261 0.08535791 0.08534224 0.23191082
0.08534081 0.08534338 0.08534048 0.08534046], shape=(10,), dtype=float32)
Downloading data from https://upload.wikimedia.org/wikipedia/commons/thumb/d/d3/Voyager_aircraft.jpg/1200px-Voyager_aircraft.jpg
385024/384113 [=====] - 0s 0us/step
393216/384113 [=====] - 0s 0us/step
This image most likely belongs to ship with a 23.19 percent confidence.
tf.Tensor(
[0.08534376 0.08533945 0.08534294 0.0853411 0.08534084 0.08534276
0.08534175 0.08534015 0.23192775 0.08533955], shape=(10,), dtype=float32)
Downloading data from https://sniteartmuseum.nd.edu/assets/166204/original/ferrari.jpg
98304/96948 [=====] - 0s 0us/step
106496/96948 [=====] - 0s 0us/step
This image most likely belongs to automobile with a 23.19 percent confidence.
tf.Tensor(
[0.08534023 0.23192024 0.08534319 0.08534195 0.0853414 0.08534336
0.08534223 0.08534166 0.08534063 0.08534511], shape=(10,), dtype=float32)

```

3. Game Development – Balloon Flight



Levels Passed: 2

of Lives: 1

Score Achieved: 13

