



MTE 438

AI in Mechatronics and Robotics

Spring 2024

Individual Project: Fruits Classification

Submitted by

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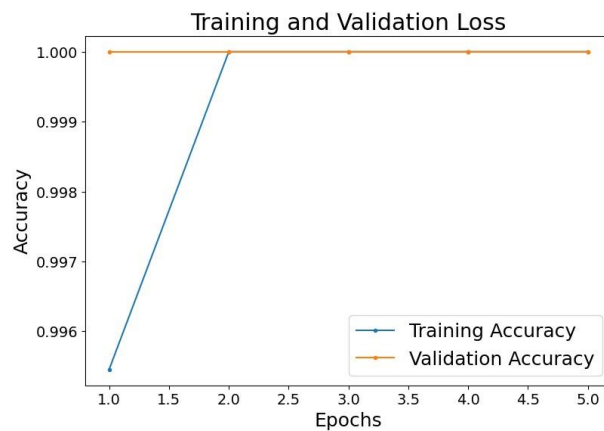
120200175

To

Dr. Haitham El-Hussieny

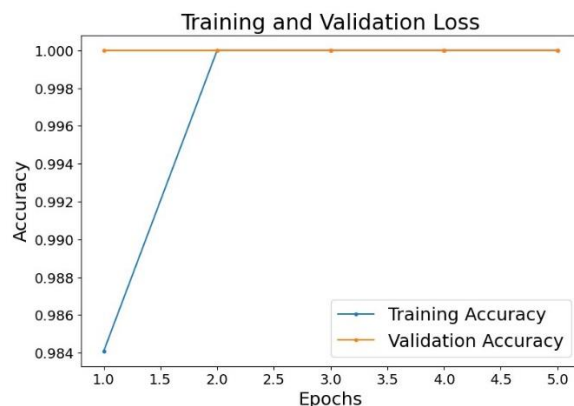
All models showed a success rate and accuracy of 100% and zero losses when used with unseen test data after the training process. However, during operation with the webcam the model utilizing transfer learning showed the highest performance out of the three models.

Transfer Learning Model (ResNet50):



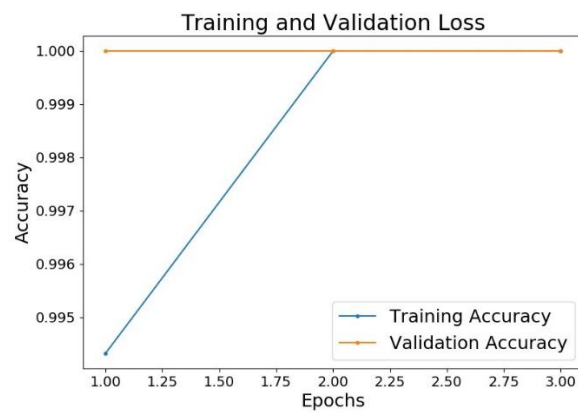
```
Success Rate: 1.00
Correct Apples: 3/3, Correct Bananas: 7/7
330/330 [=====] - 24s 73ms/step - loss: 0.0000e+00 - accuracy: 1.0000
Test Loss and Accuracy: [0.0, 1.0]
```

CNN Model:



```
Success Rate: 1.00
Correct Apples: 5/5, Correct Bananas: 5/5
330/330 [=====] - 9s 27ms/step - loss: 0.0000e+00 - accuracy: 1.0000
Test Loss and Accuracy: [0.0, 1.0]
```

ANN Model:



```
Success Rate: 1.00
Correct Apples: 7/7, Correct Bananas: 3/3
330/330 [=====] - 9s 28ms/step - loss: 0.0000e+00 - accuracy: 1.0000
Test Loss and Accuracy: [0.0, 1.0]
```