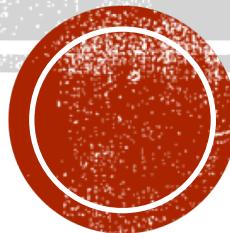


DETECTING POISONOUS MUSHROOMS



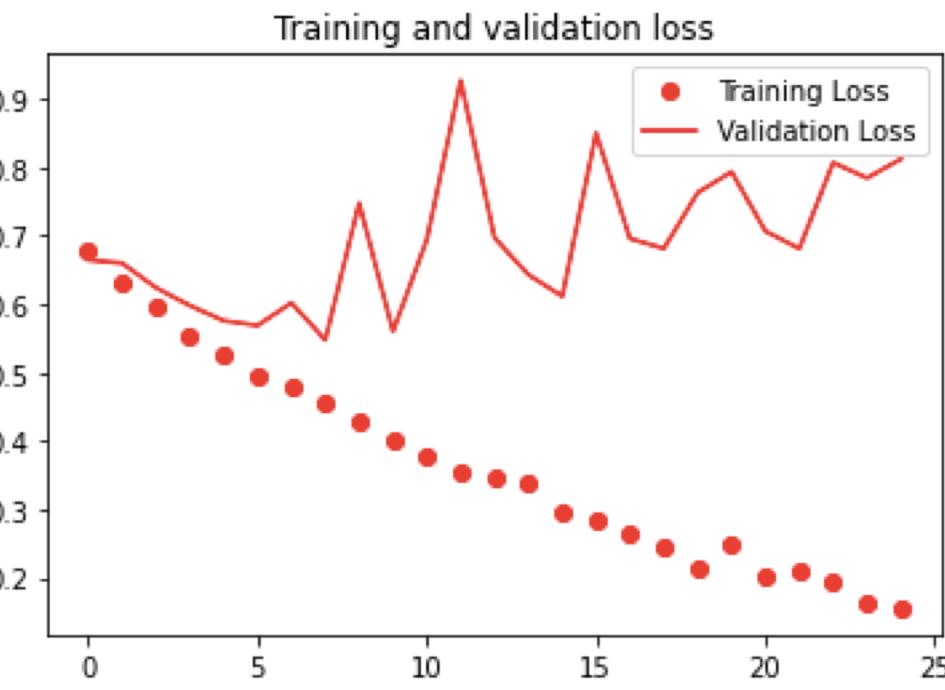
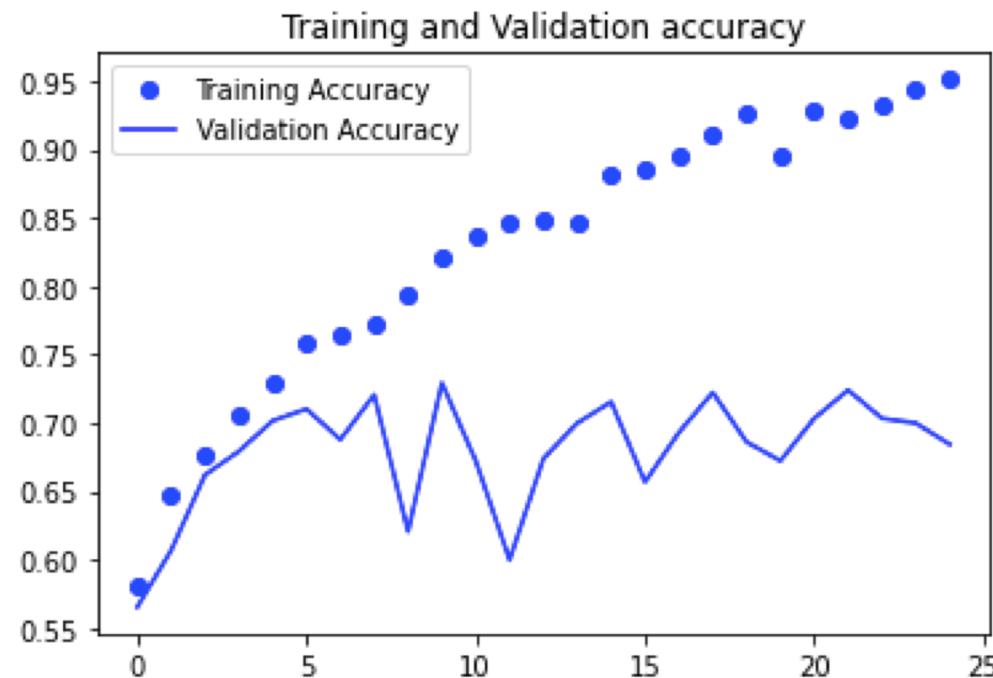
PROVIDE ADDITIONAL FOOD OR INCOME

Restaurants, Grocery Stores or Farmer's Markets

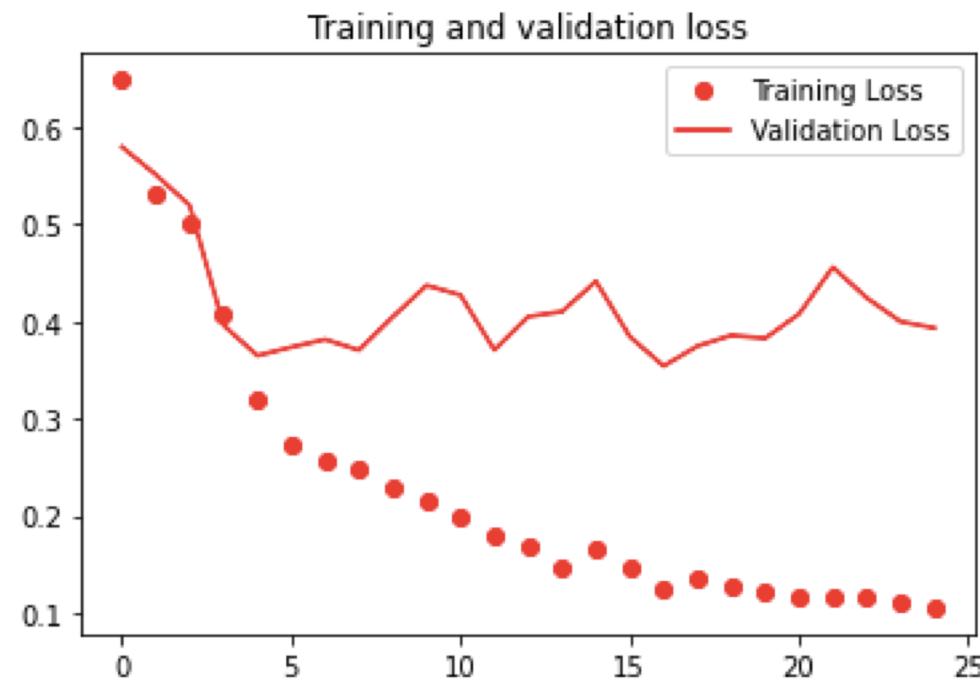
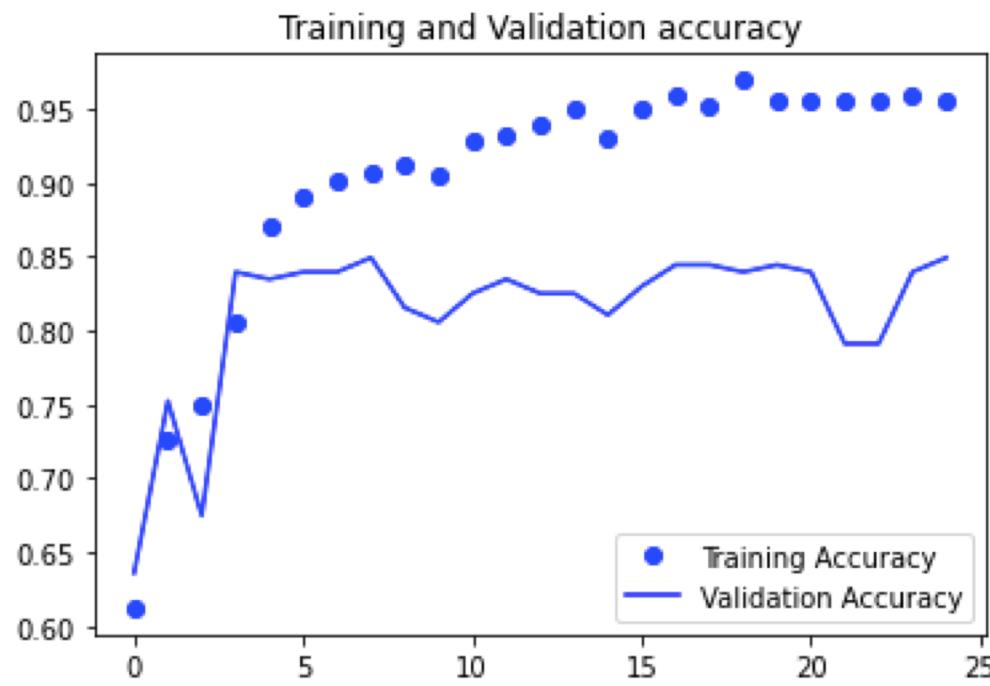
- ✓ For restaurants, generally more to an upscale restaurant
- ✓ Free samples, restaurants are generally interested in finding fresh local food to add to their menu
- ✓ Upscale grocers are likely to have the shoppers that will pay a premium price for gourmet mushrooms
- ✓ If nothing works out, the farmer's market is a great place



A FEW DIFFERENT FAMILY OF MUSHROOMS

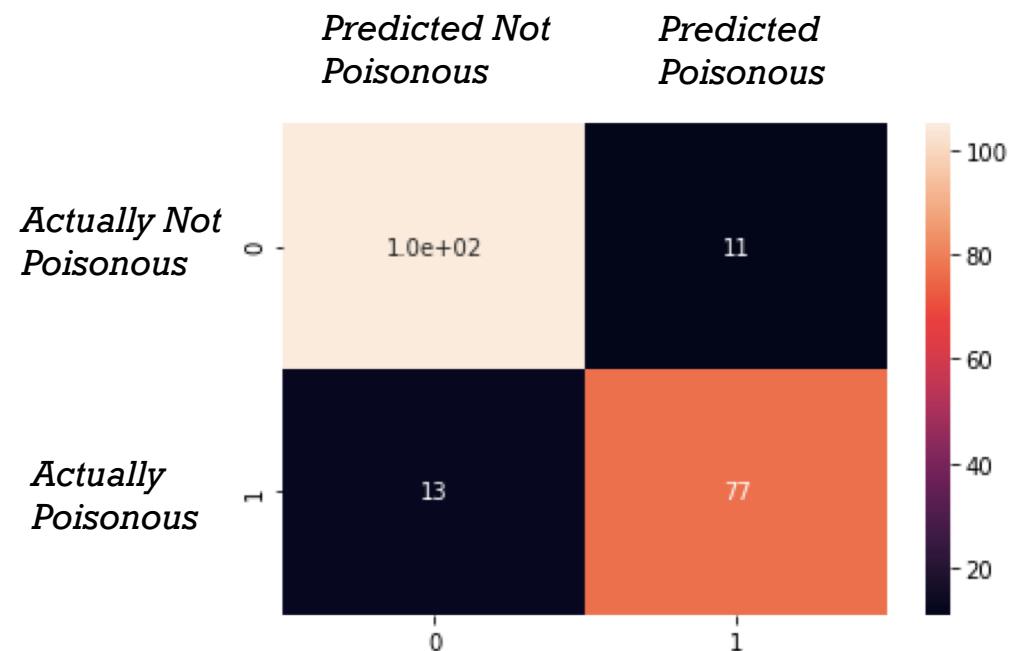


TWO TYPE OF MUSHROOMS EVALUATION



CNN AND CHANGING THE THRESHOLD

Before Changing the Threshold

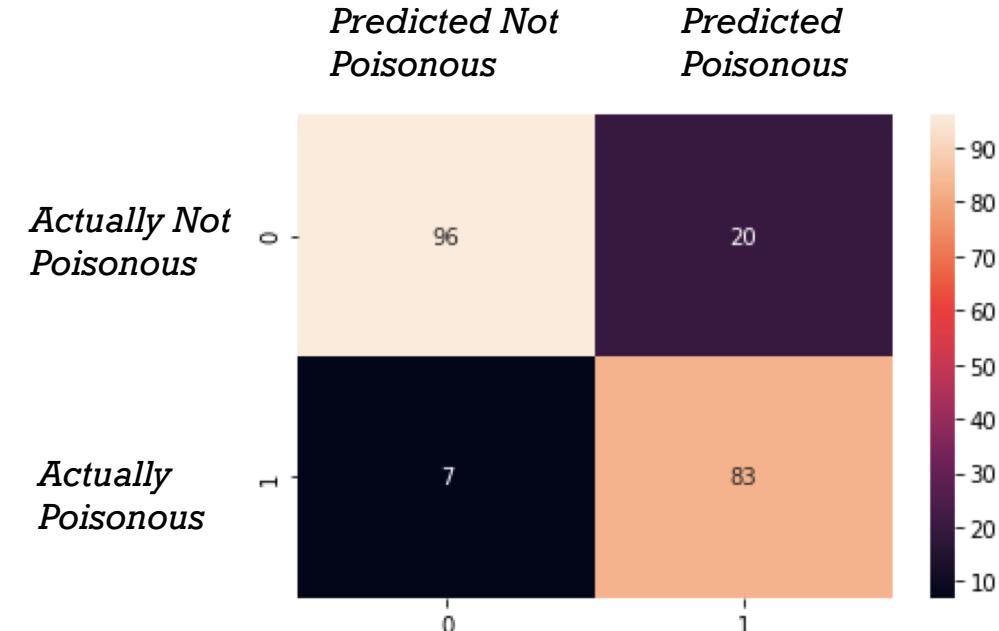


Threshold of 0.5:

Precision score: 0.875

Recall score: 0.8555555555555555

After Changing the Threshold



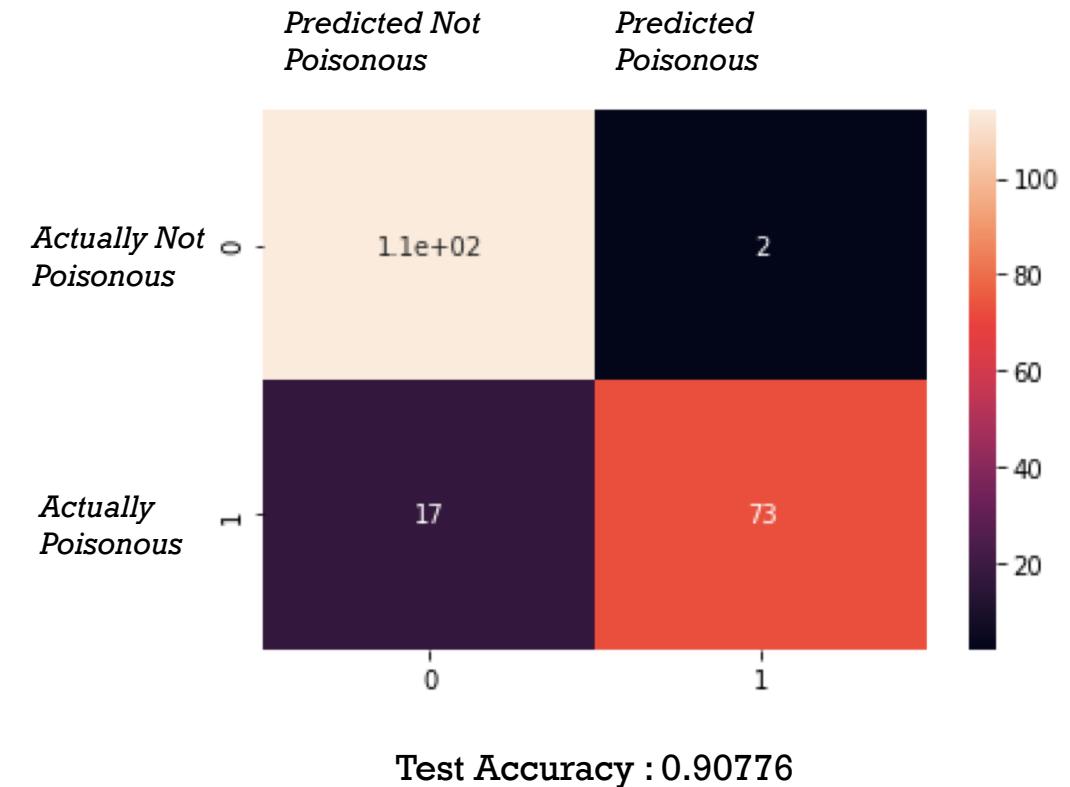
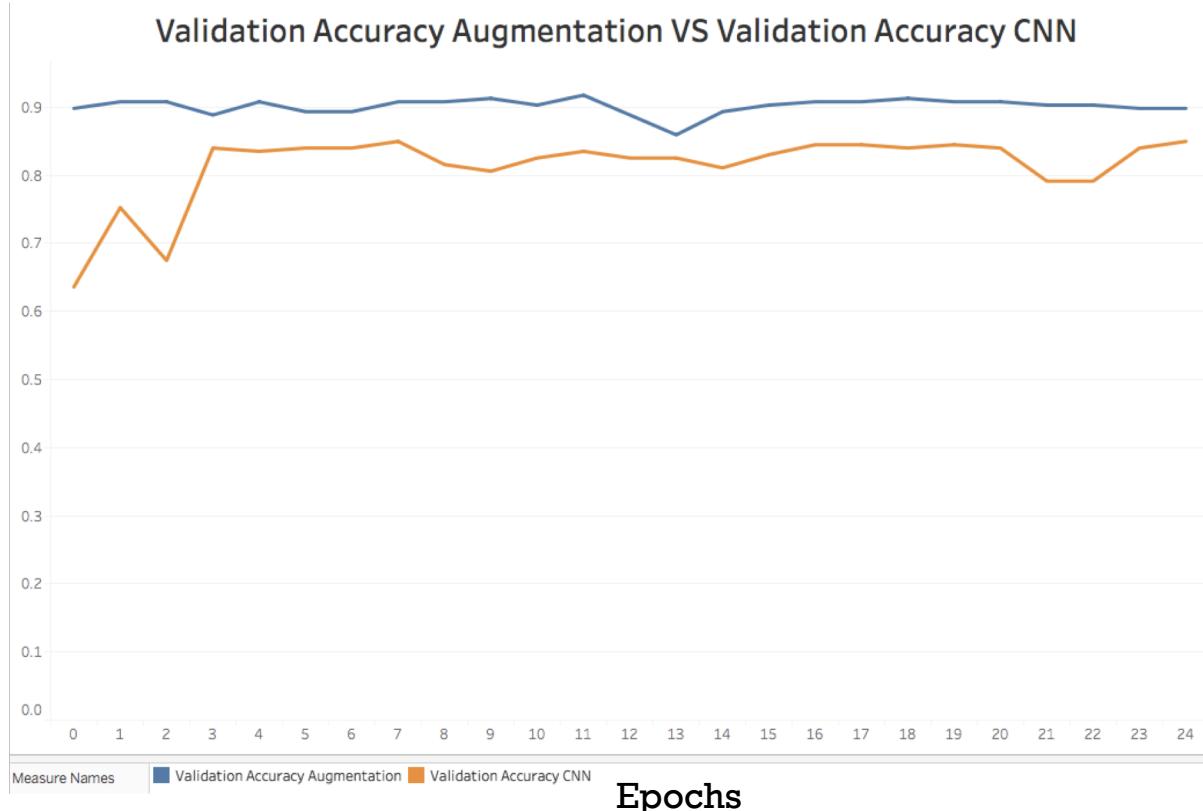
Threshold of 0.2:

Precision score: 0.8058252427184466

Recall score: 0.9222222222222223



AUGMENTED IMAGES

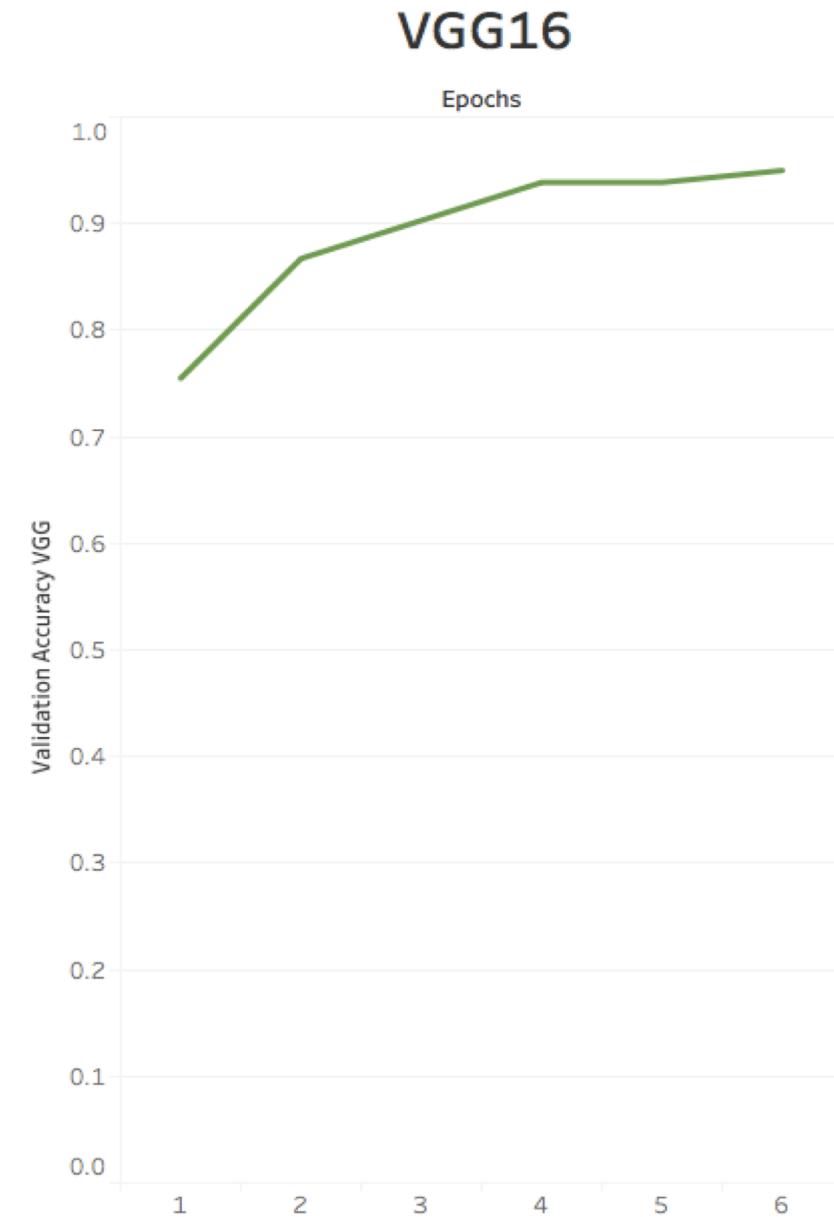


VGG16

- VGG16 is a CNN model
- Pulled and used in the Keras pre-trained library
- Altered the the amount of my outputs to 2
- The validation loss also showed improvement, with a validation accuracy of 95% with a validation loss of 0.04 by the 6 epochs
- For the original CNN, the accuracy only got up to 84% for validation accuracy with a validation loss of 0.38 by the 6 epochs

	Predicted Not Poisonous	Predicted Poisonous
Actually Not Poisonous	107	9
Actually Poisonous	2	88

Was able to reduce false negative to 0.9%



GOALS

1. Gradually add more images of the same type of mushrooms
2. Add more family of mushrooms and more images per mushroom
3. Correctly match the mushroom to the family it belongs to
4. Possibly look into the VGG 19 model with 19 layers deep compared to 16 layers

