

Neural_Net_Presentation

February 7, 2021

0.1 This contains a brief overview of what our Neural network and what we did to achieve our accuracy metric. Below is our look at what we looked at to build this model.

```
[8]: mask_data.class_to_idx
```

```
[8]: {'covered': 0, 'incorrect': 1, 'uncovered': 2}
```

```
[11]: criterion = nn.CrossEntropyLoss()
      optimizer = optim.Adam(model.parameters(), lr=0.009)
```

```
[18]:
```

Begin Training

```
HBox(children=(FloatProgress(value=0.0, max=2.0), HTML(value='')))
```

Done with Epoch 0

Done with Epoch 1

Training Finished

```
[19]: accuracy_stats
```

```
[19]: {'train': [72.1, 77.7], 'val': []}
```

```
[48]: y_preds_flat = np.array(y_preds).flatten()
```

```
[47]: y_true_flat = np.array(y_true).flatten()
```

```
[50]: print(classification_report(y_true_flat, y_preds_flat))
```

	precision	recall	f1-score	support
0	0.95	0.96	0.95	971
1	0.96	0.95	0.96	1020
2	0.98	0.99	0.98	1009

accuracy			0.96	3000
macro avg	0.96	0.96	0.96	3000
weighted avg	0.96	0.96	0.96	3000

0.2 Save model to pickle

```
[53]: torch.save(model, '../Config/inceptionResnetV1.pth')
```

```
[57]: torch.save(model.state_dict(), '../Config/inceptionResnetV1Params.pt' )
```

```
[56]: ### if you want to load the model, run the below commented code
```

```
# model_path = '../Config/inceptionResnetV1.pth'
# model = torch.load('../Config/inceptionResnetV1.pth')
# model.eval()
```

```
[ ]:
```

```
[ ]:
```