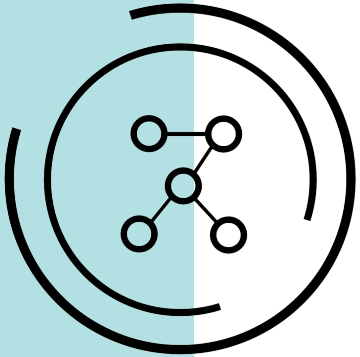


Data Science Society

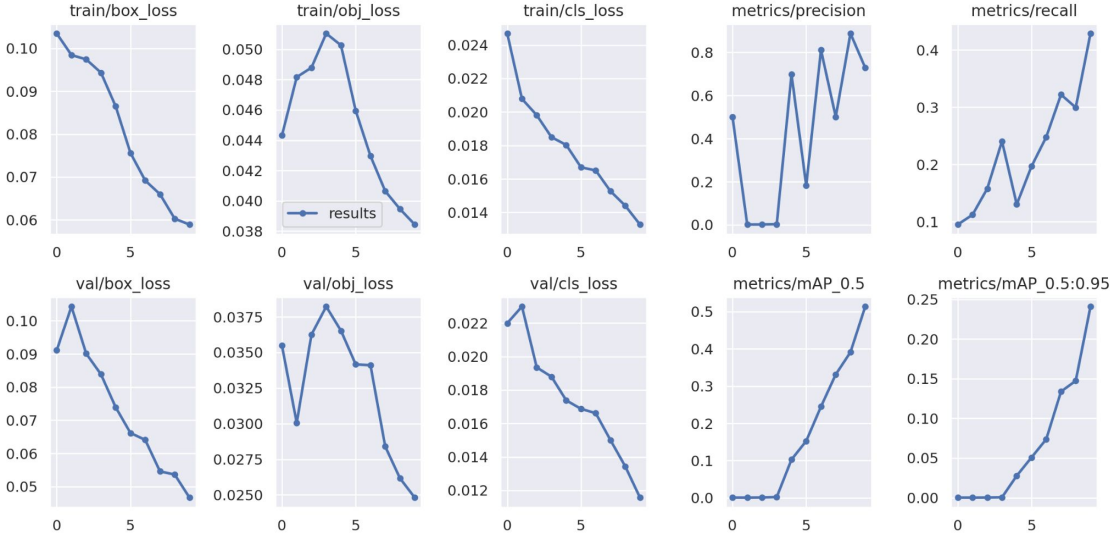
Weekly Meeting #7

11/21/2021

Fall 2021

Week #6 Standup - Anita (Training Model on 10 Epoch)

- Fixed Last week's bug of model not training
- Able to output custom model output
- Our group trained the model with different number of Epochs.
  - More epoch = more accuracy, more prone to overfitting
- Here are the results from a model trained with 10 Epochs



Results:

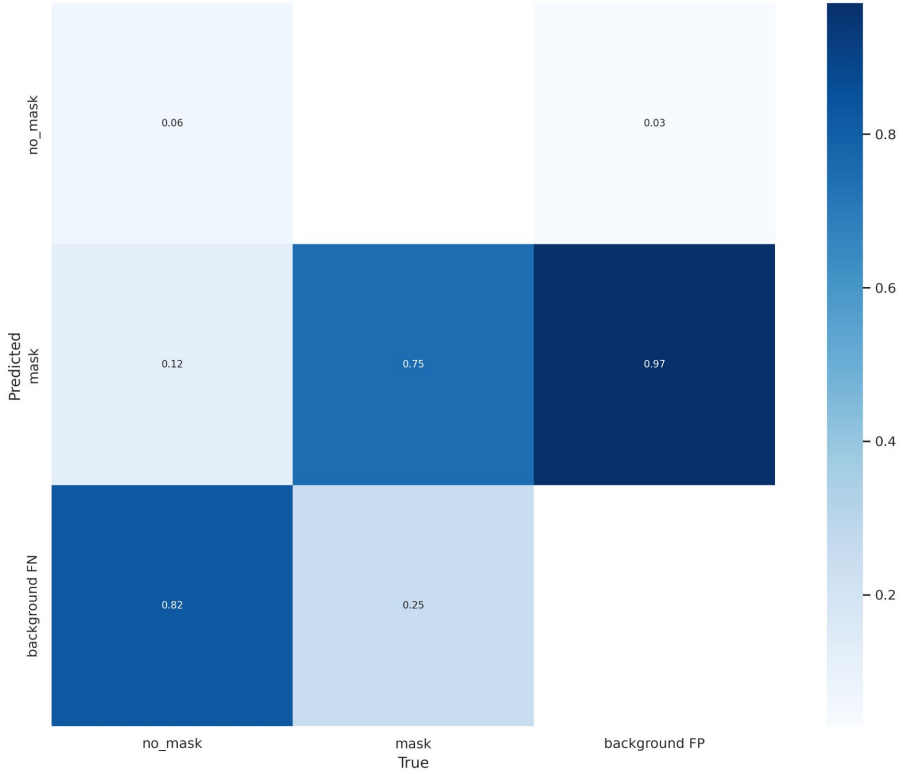
1. Bounding Box Loss ranges from (0.1-0.06)
2. Objectness Loss (measures confidence of coverage) ranges from (0.050 - 0.038)
3. Classification Loss (CLS) ranges from (0.024 - 0.014)
4. Precision (proportion of predicted masks were correct) - max 0.8 on training and max 0.5 on validation
5. Recall (proportion of masks wearers were actually identified) - max 0.45 in training and 0.25 in validation

Resources:

Yolo Metrics Explained

Precision vs Recall

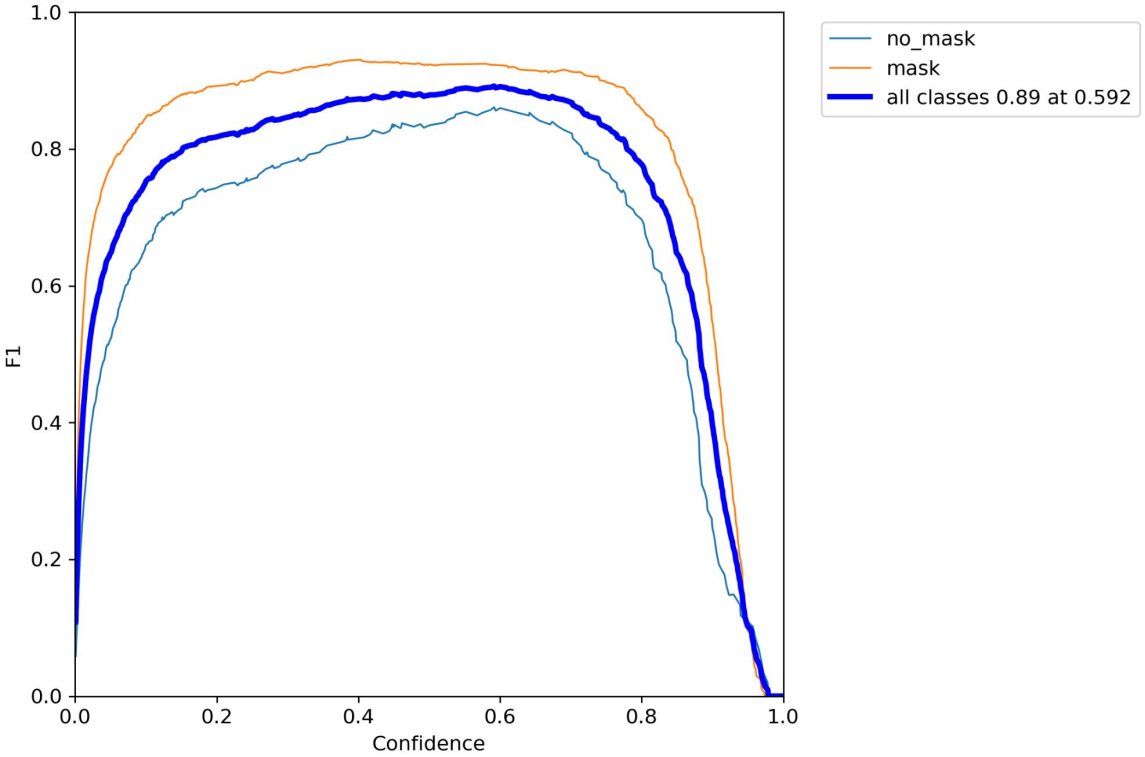
Week #6 Standup - Anita (Training Model on 10 Epoch)



Conclusions

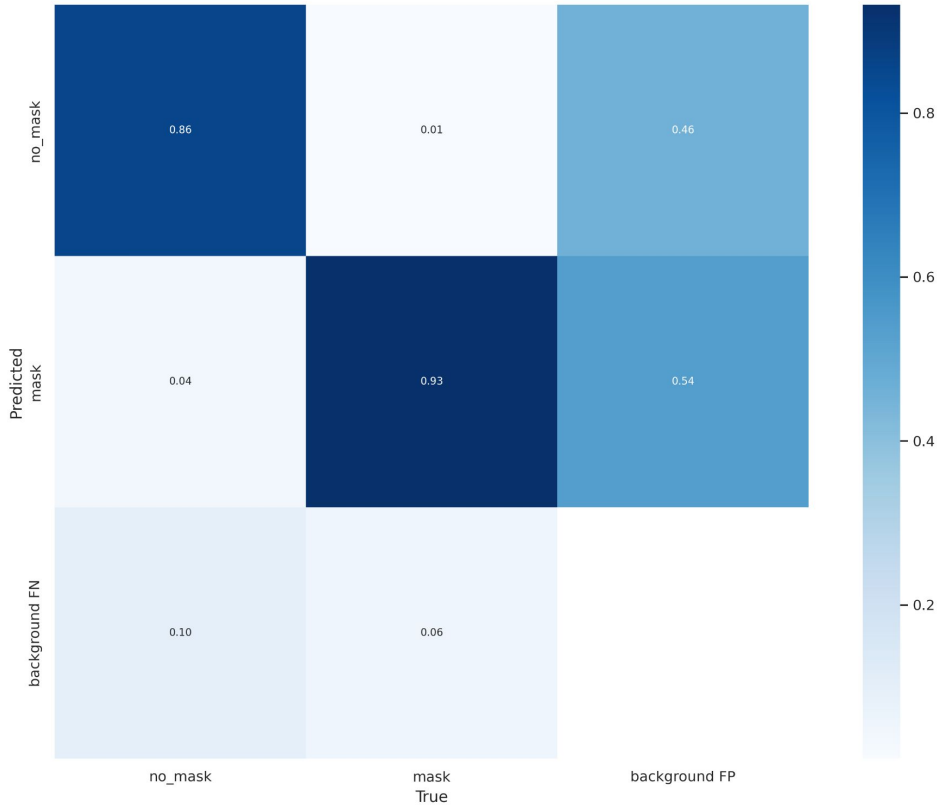
- Loss doesn't look bad but it is relative
- Way too low Recall, meaning model is classifying a lot of things as mask when in fact it is not.
- ^ this idea is supported in this confusion matrix where the model is predicting a lot of the background as masks (0.97)
- Possible extensions
  - building the non-mask dataset to train model
  - Adding more epochs to further decrease loss

Week #6 Standup - Jasmine (Training Model on 50 Epoch)



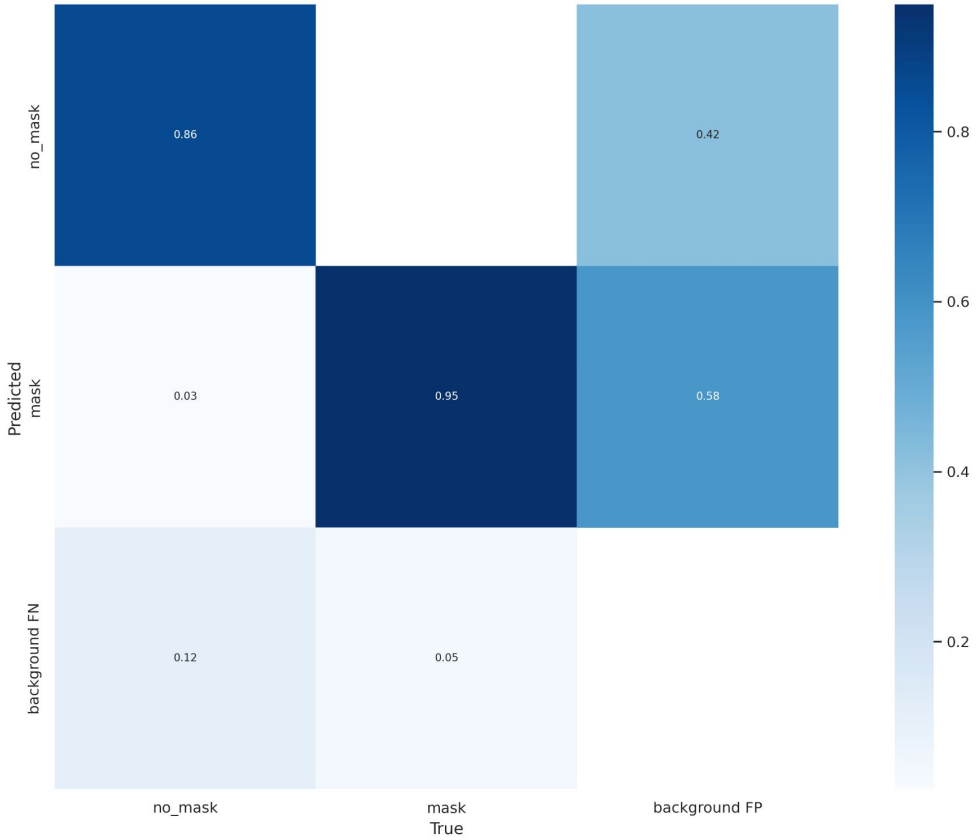
- F1 score = weighted average of Precision and Recall
- Average **F1 score of around 0.82**
- That's pretty good!
- Still lower F1 score on "no mask" so train on Coco Dataset

Week #6 Standup - Jasmine (Training Model on 50 Epoch)



- Significant increase in recall from epoch 10
- **93% true positives** for predicting masks
- **86% true positives** for predicting no masks
- Pretty decent accuracy! Yay!
- Next Step: train on coco dataset with more “no mask” training images

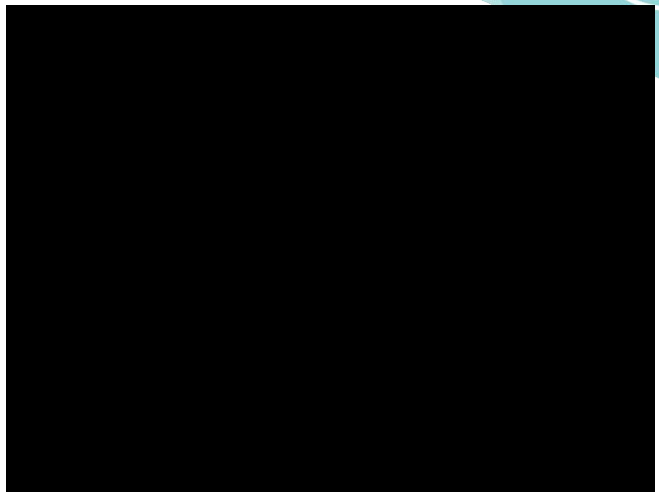
Week #6 Standup - Tony (Training Model on 100 Epoch)



- **95% TPs** (increased from 93% for 50 Epoch)
- **86% TNs** (same as 50 Epoch)
- **No FNs** (mask but predicted no_mask)**, but some FPs** (no_mask but predicted mask)
- Seems that, with higher epochs, we classify more mask

Week #6 Standup - Erica (Fiftyone)

- Towards Data Science Method
  - Too little incorrectly worn masks from Roboflow
  - Relabeled to only with_mask or without_mask
- Bring in outside dataset of incorrectly worn masks
  - Cabani: MaskedFace-Net
  - Pros:
    - Variations of chin, mouth, nose showing
    - Lots of data
  - Cons:
    - Self created incorrectly worn masks
    - Not in a real life natural setting
    - No associated txt file in darknet format
    - One large json file of details to parse and mine through
- Resources/Links
  - Github of Incorrectly Worn Masks
  - JSON
  - Data



Week #6 Standup - Ryusuke (Fiftyone)

Overview:

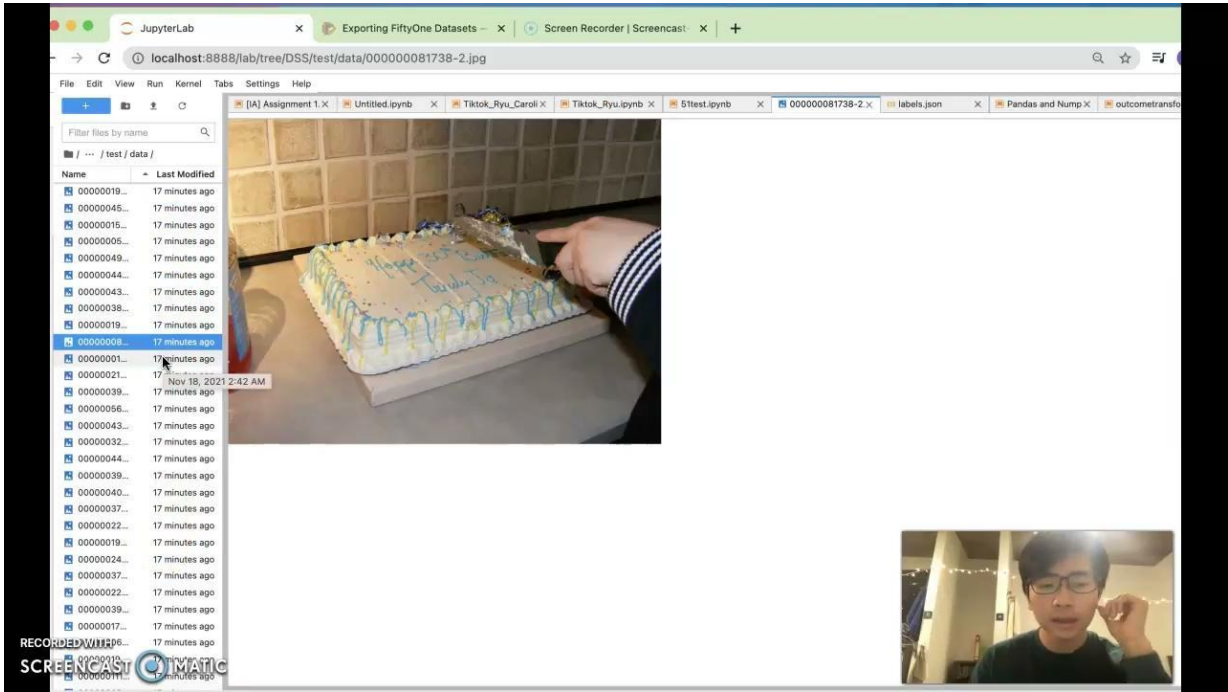
➔ Isolating images with the label “person” and choosing only those images to download to local directory

Resources:

- https://voxel51.com/docs/fiftyone/user_guide/export_datasets.html
- Classes section of the Export section of this 51 documentation

Next Steps:

★ Importing the images into Deepnote for further training/analysis



Week #6 Standup - Adi (Fiftyone)