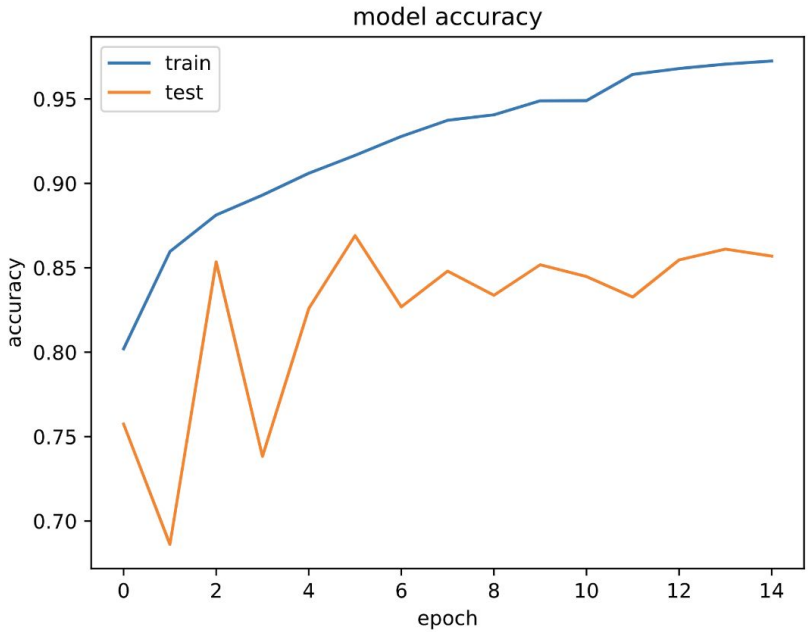
MobileNet v2 Collab

Group 1: Rohan Sanjay, Carolina Souza, Kartik Balodi, Kelly Huang, Derek Lim

Group 3: Anna Gard, Wendy Qi, Mei Zhang, Chris Lange, Kenneth Su

Current Model - Full Dataset

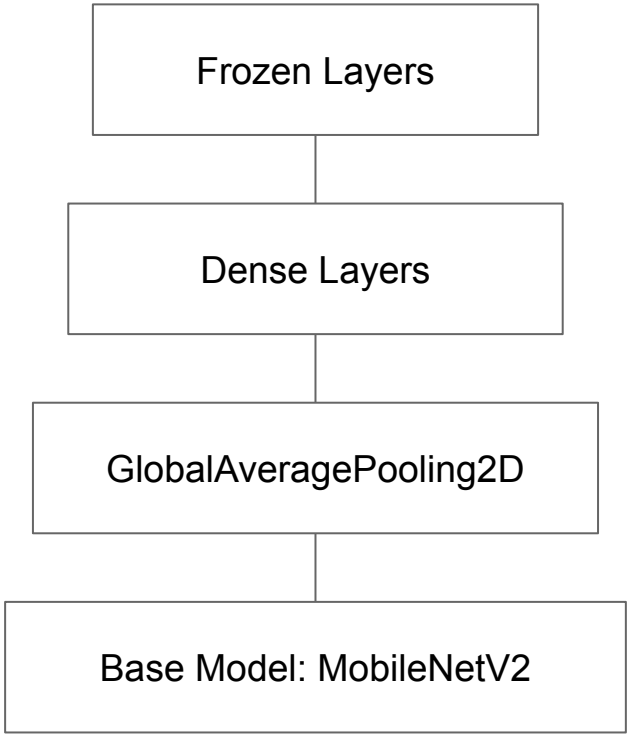


Posture	Correct	Total	Accuracy
Sitting	1679	1906	88.1%
Standing	3895	4392	88.7%
Lying	670	988	72%

```
[[1679  168   59]
 [ 487 3895   10]
 [ 262   56  670]]
```

Test Accuracy: **87.2%**

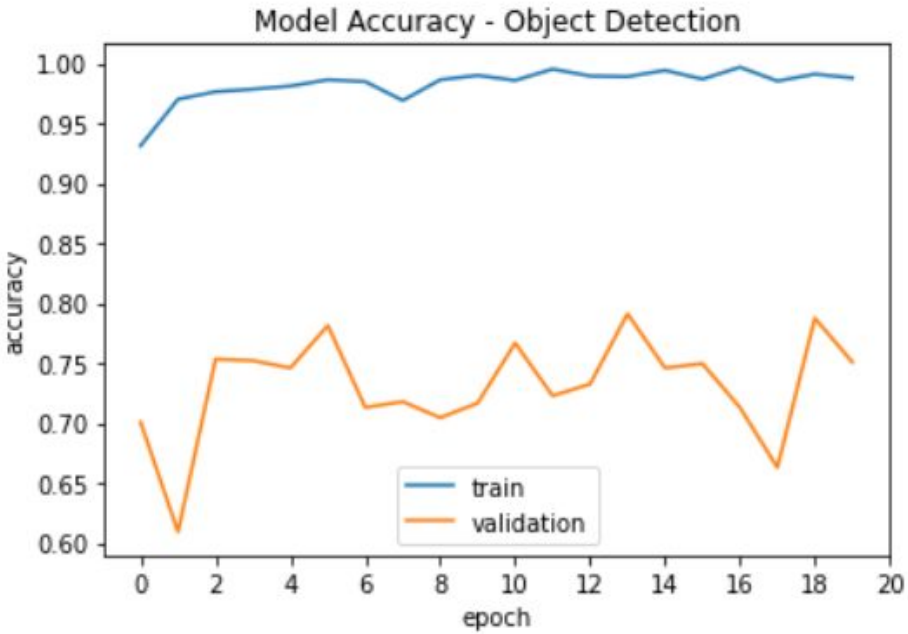
Split: 50, 30, 20



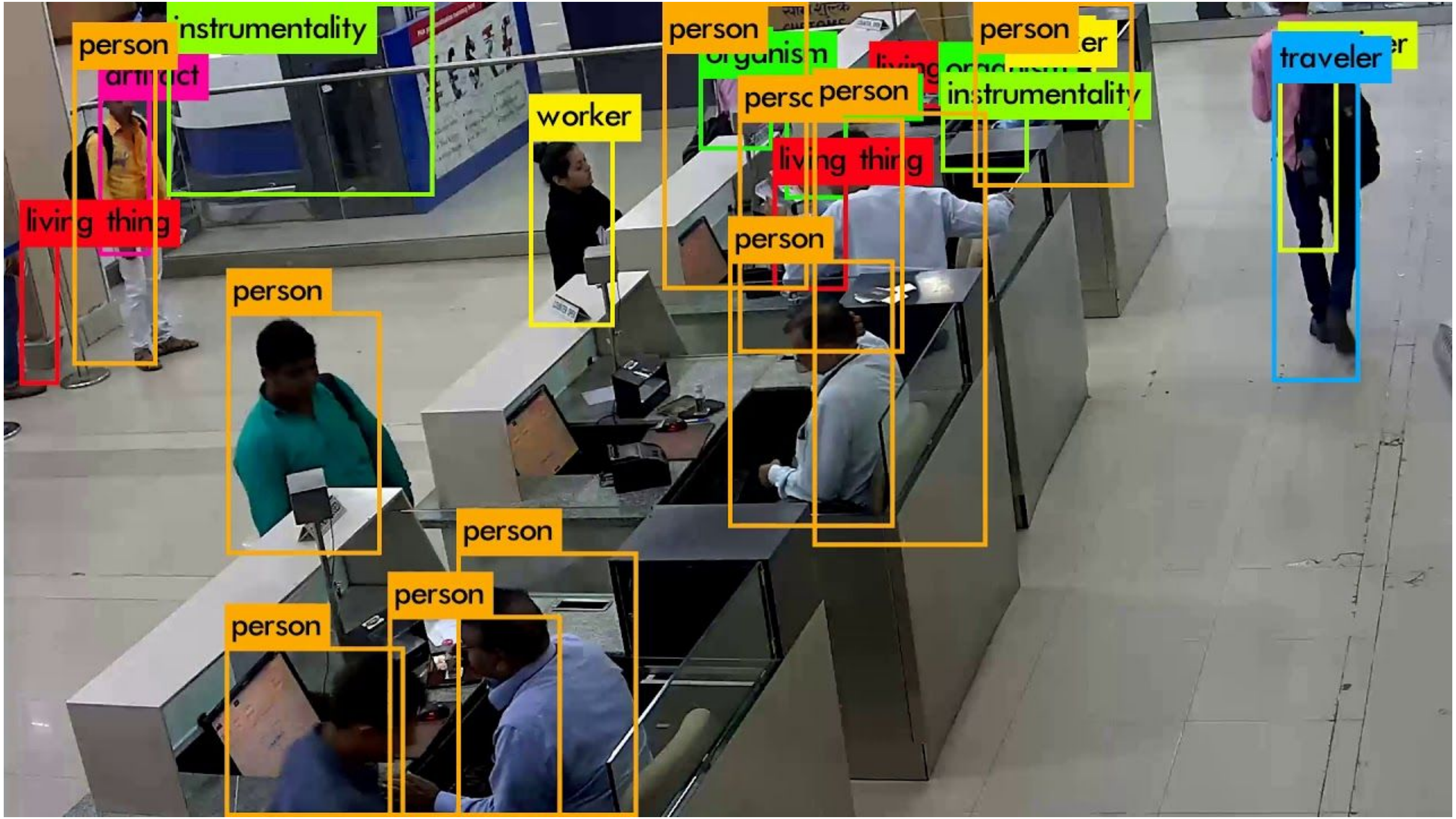
Cross Validated Hyper Parameters	
Batch Size	18
Fine Tuning	90

Our Model

Model With Object Detection



Posture	Correct	Total	Accuracy
Sitting	62	133	46.6%
Standing	429	529	81.1%
Lying	0	57	0%


person
instrumentality
living thing
worker
person
person
person
instrumentality
traveler
person
person
person
person
person
person

The Code

The Problem

- Overfitting
- Loss at validation set was higher than training set

The Solution

- Cross-Validation in effort to stop overfitting
- Object Detection
  - Removed images that were less than 20% likelihood of being a person

Lessons & Areas for Improvement

What we learned:

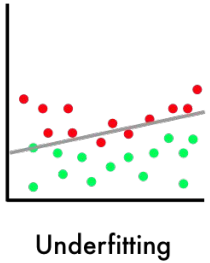
- Focusing on pre-processing vs model architecture
- Testing over large sets
- Importance of tuning

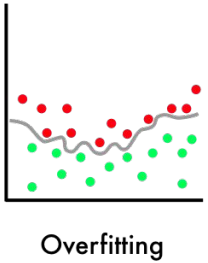
How we plan to improve:

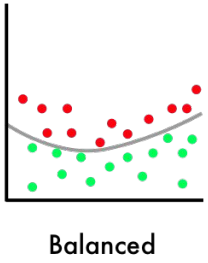
- Batch normalization
- Object Detection on HPC
- Further tuning
- Feature extraction

Higher Accuracy

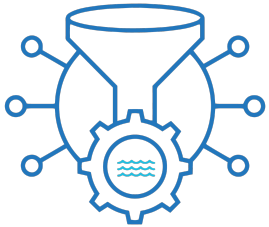
Lower Overfitting







Less Preprocessing



Our End Goal

Questions?