Improve the accuracy of Pneumonia Detection from Chest X-ray using Transfer Learning

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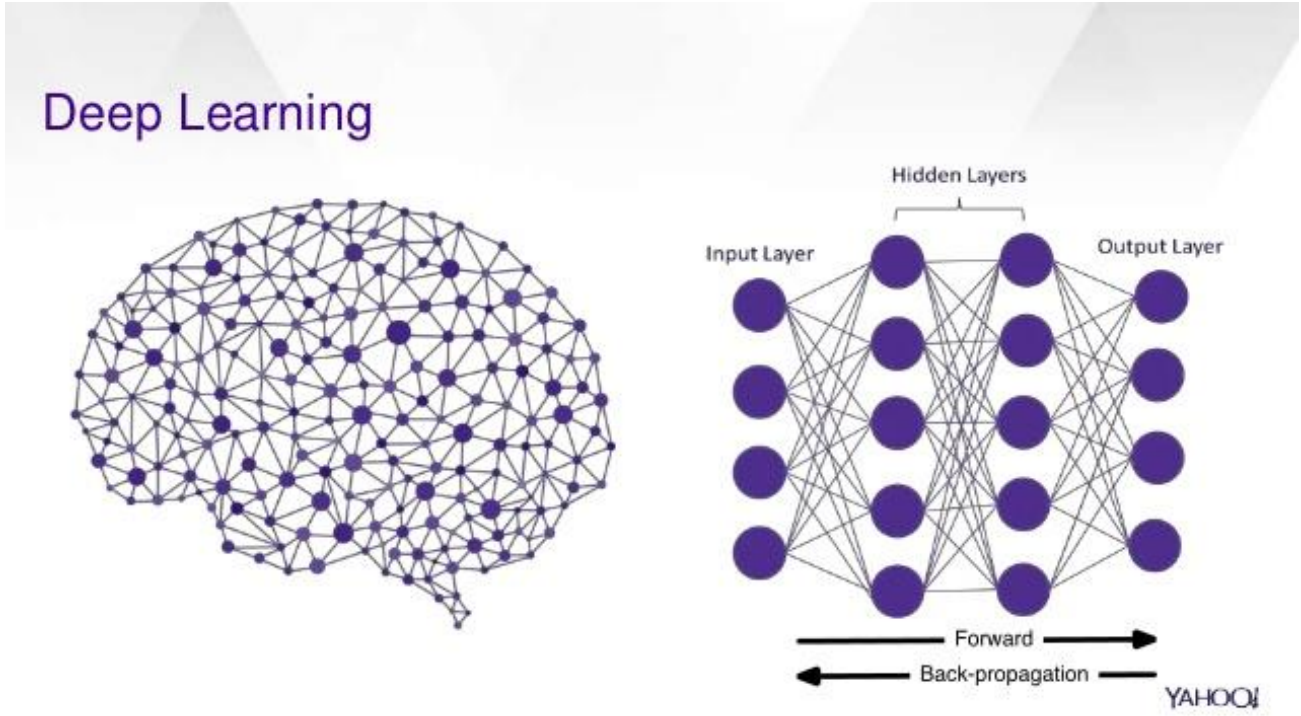
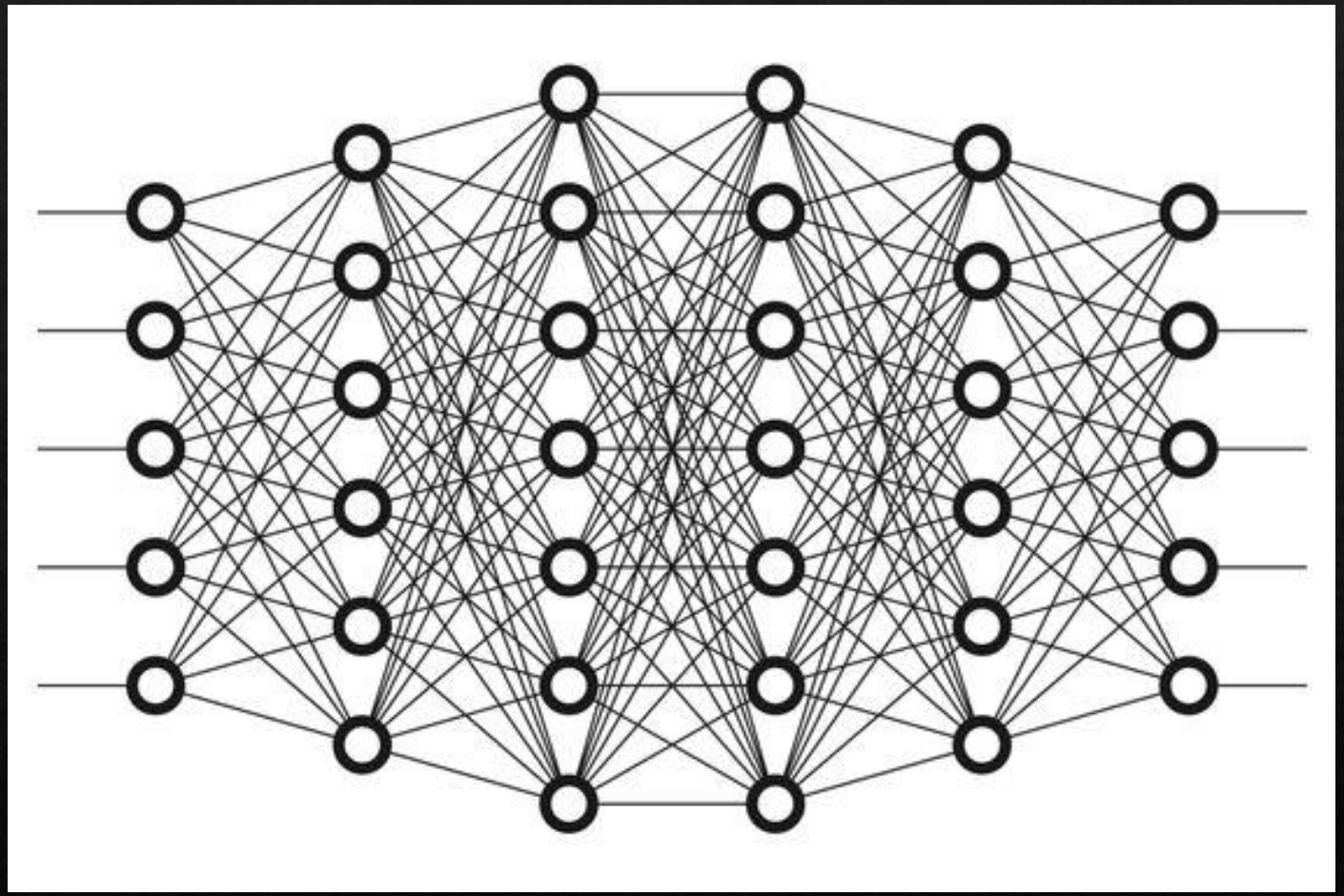


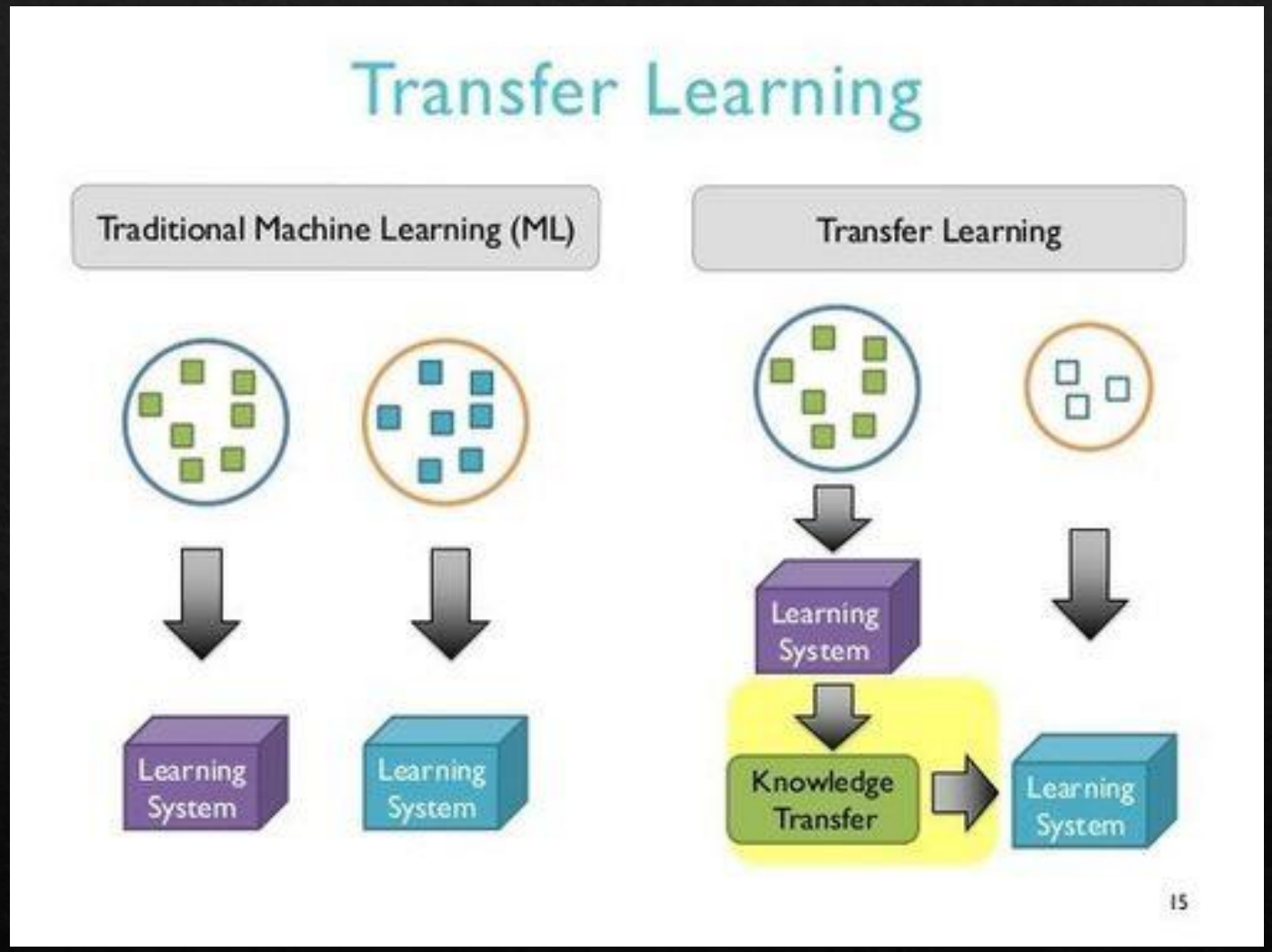
Deep learning

- Deep learning Extract patterns from data
- There are many benefits to deep learning
- Big Data



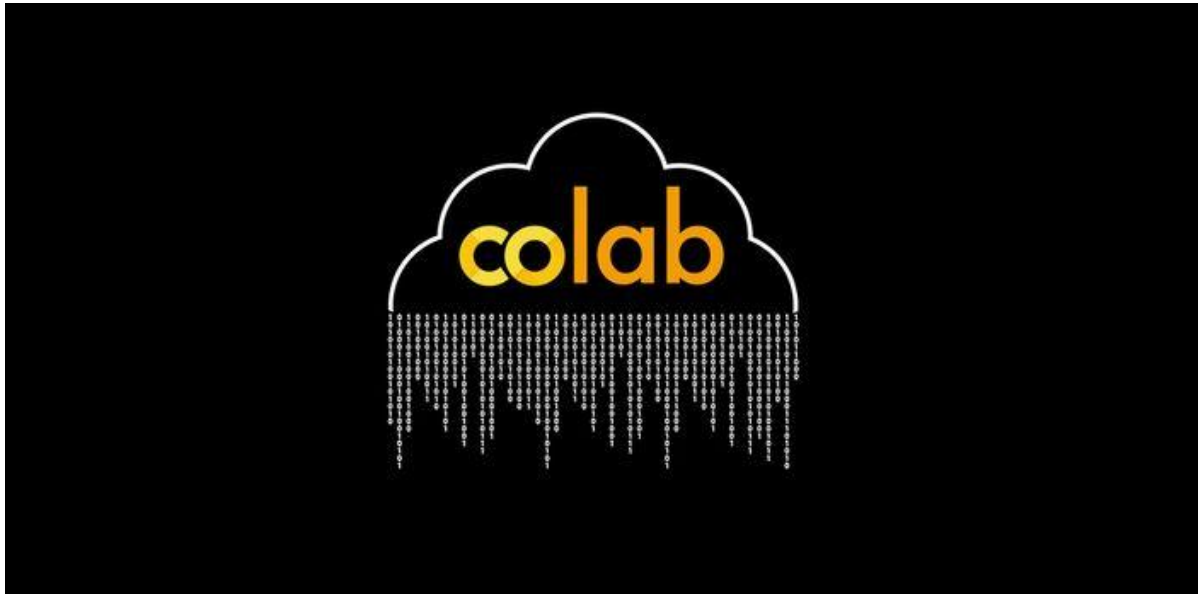
Transfer learning

- Takes a long time to train a model
- Transfer learning takes a lot less time and is way more accurate
- Downloading transfer learning models



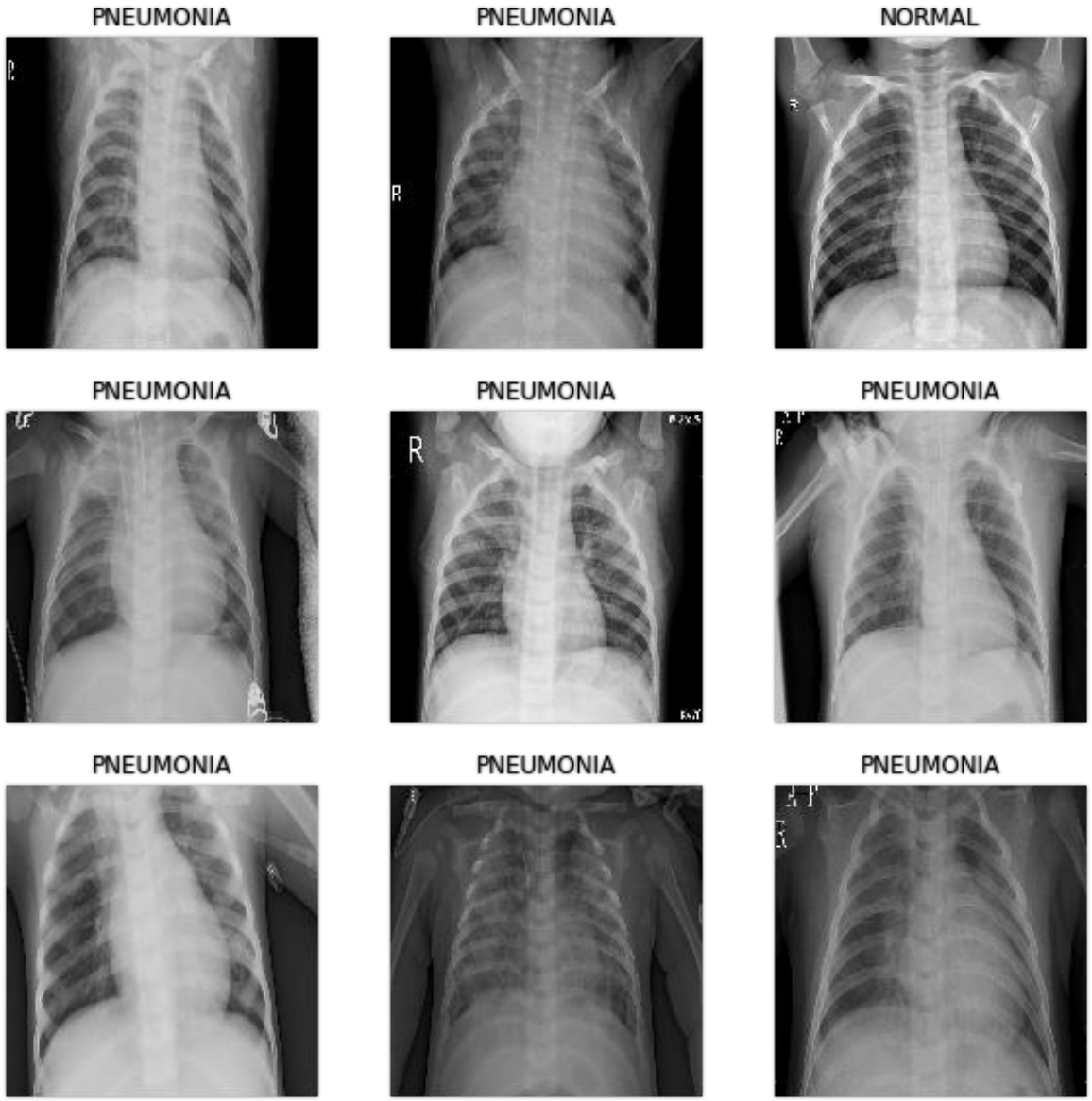
Computation Set Up

- Google Colab
  - **Free** service offered by google
  - It provides GPU computation



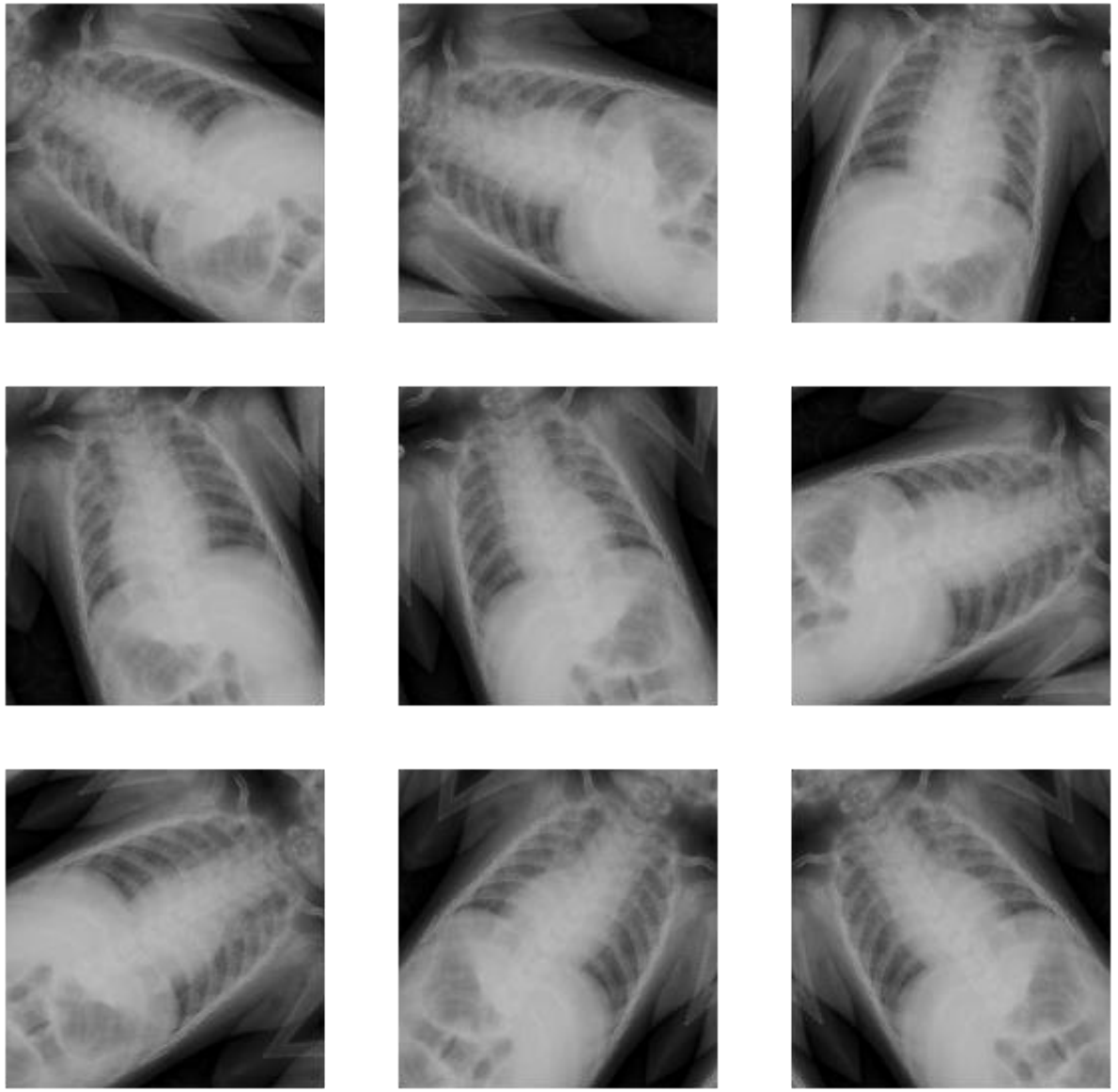
Data

- 5216 images for training
- 690 images for validation



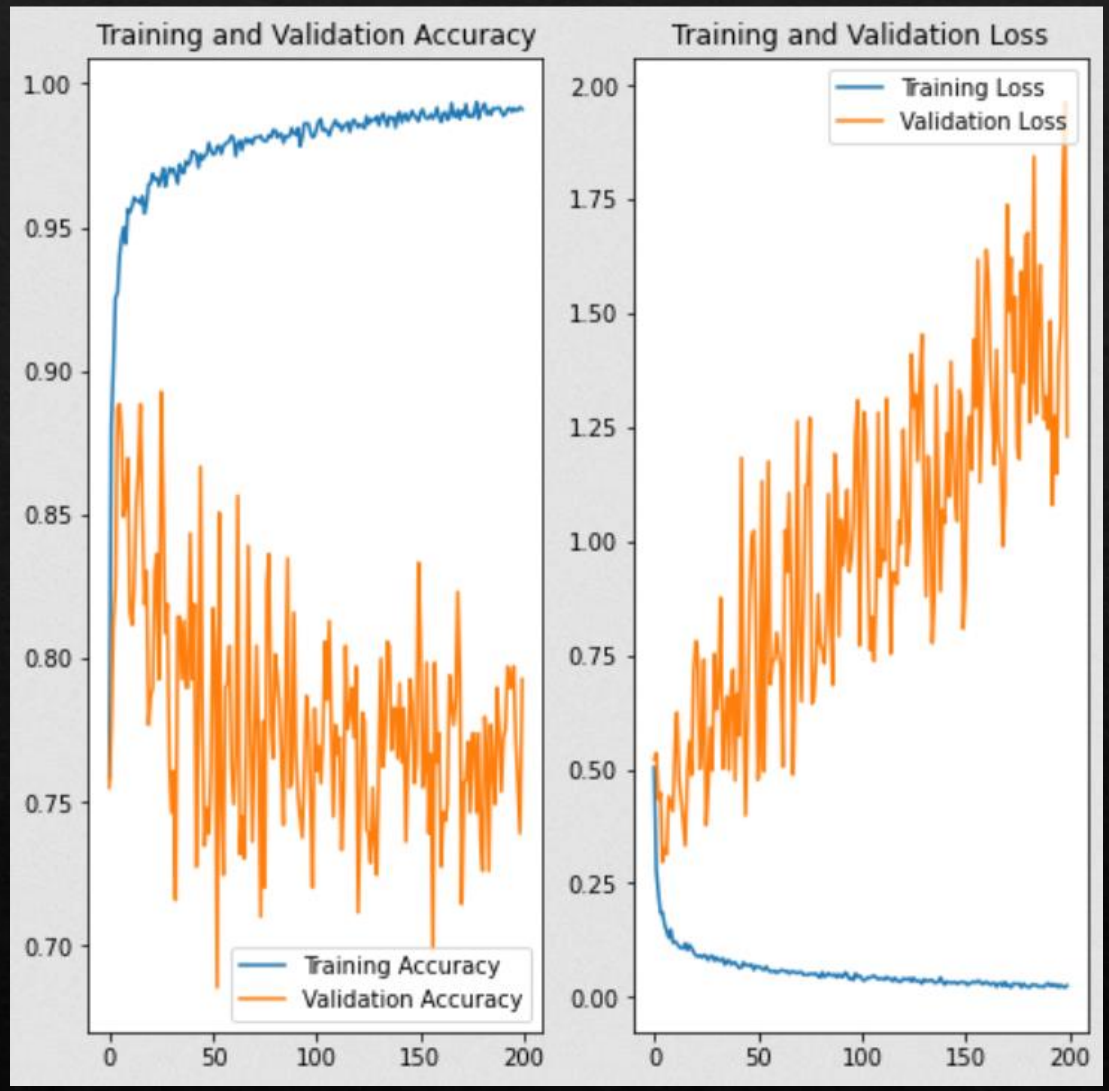
Data augmentation

- Explanation
- More data to train
- Reduce overfitting



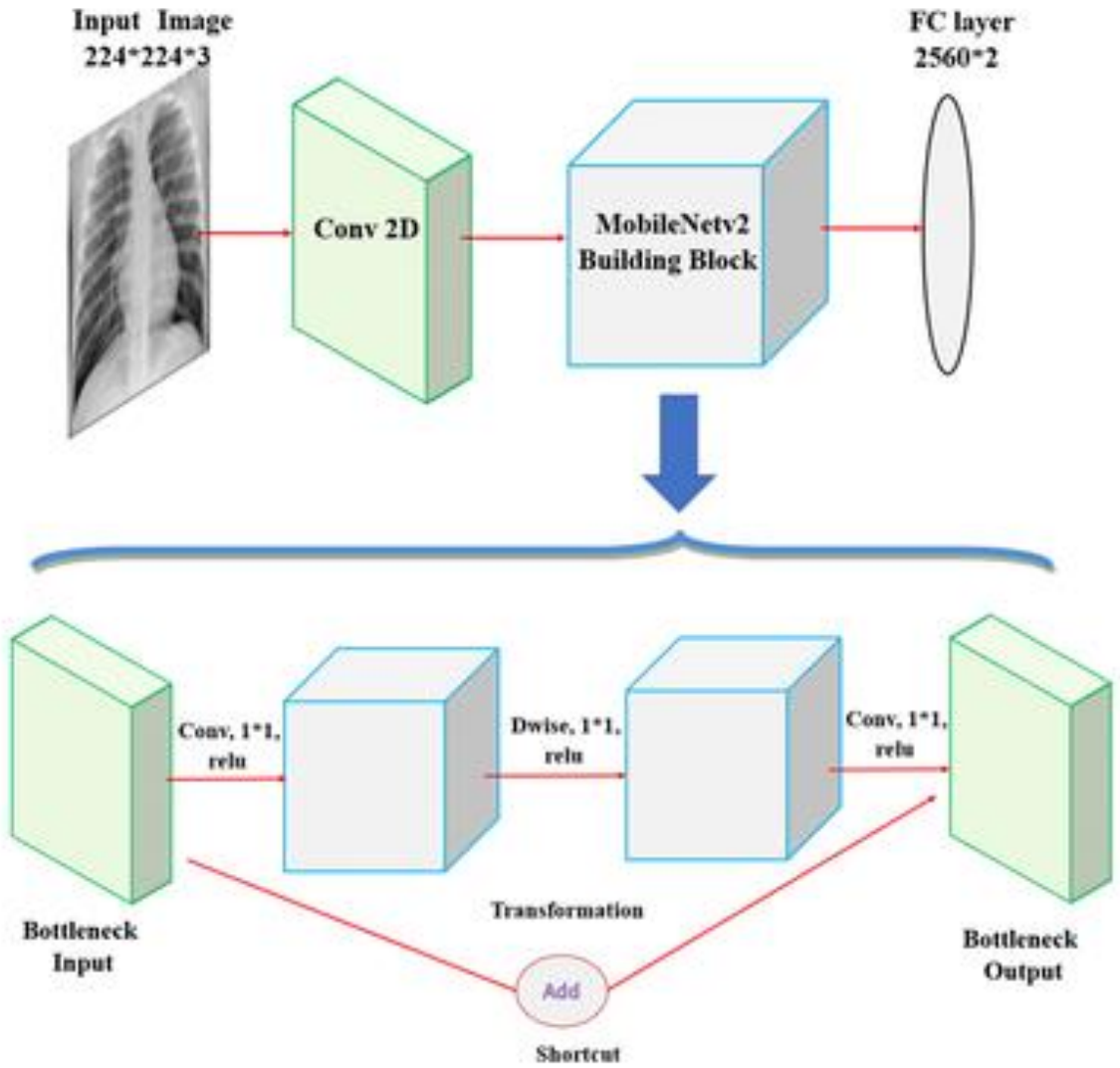
Without Transfer Learning

- 32 images
- 200 epochs
- Best accuracy: 89.28%



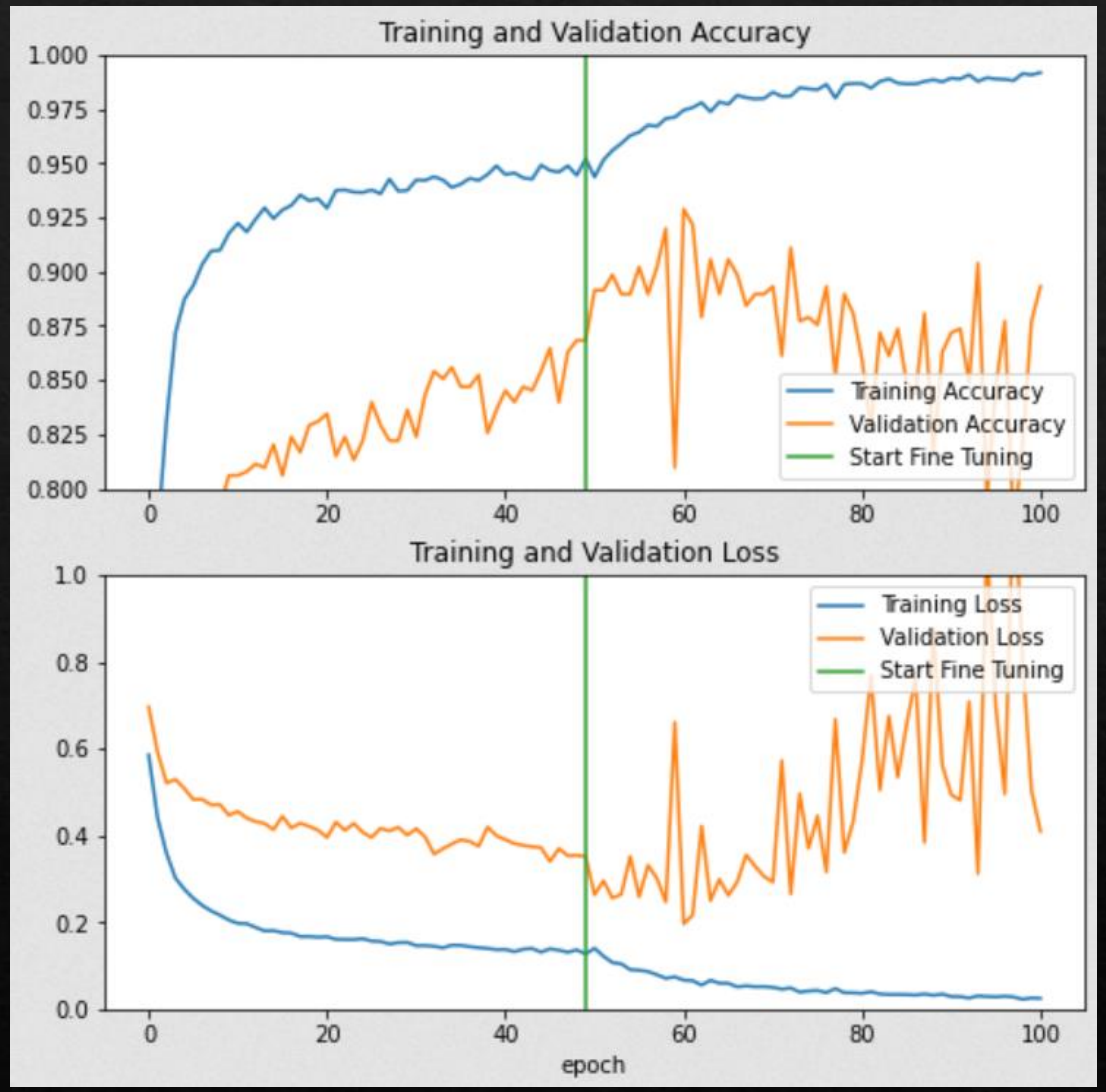
MobileNetV2

- Designed by google
- Trained on ImageNet dataset
- Total params: 2,257,984



With Transfer Learning

- MobileNetV2
- 50 epochs
- Freeze = False
- With an additional 50 epochs
  - Best accuracy: 92.88%



Conclusion

- Deep learning
- Transfer learning
- Are there are questions?