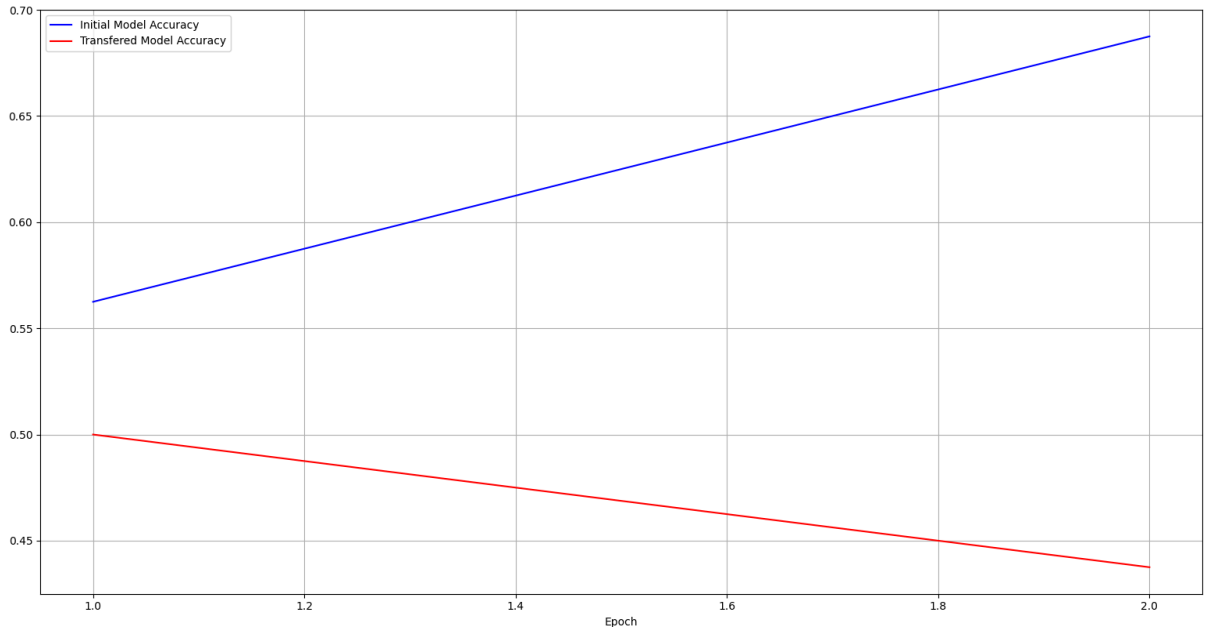
Names: Yazmyn Sims, Annie McKay

# Transfer Learning

Submit:

- A single plot showing validation accuracy as a function of epoch containing with transfer and without transfer curves, entitled “Far Transfer from Facial Recognition to Sharks vs Seals”




- The final classification accuracy on the test set with transfer and without.

  The final accuracy of the transferred model after 2 epochs was 68.4%, and the one without transfer was 43.64%. The data in the graph is reversed.

- An image of each facial recognition class

Happy

Neutral

Surprised

- An image of each class in the problem of your choice

Seals

Sharks

- The summaries for both models (with and without transfer)

**RandomModel:** The RandomModel is a baseline for comparison in the learning task because it doesn't start off with useful information. It loads a pre-trained model (BasicModel) but it randomizes the layer weights practically starting the learning process over. Dense layers are added to teach the model the new task but the layers from the pre-trained model will not be updated during training. This keeps the learning between the two separate so that the RandomModel doesn't have an effect on the BasicModel. Lastly the model is trained with the new data and we can now see how well it performed.

**TransferedModel:** The TransferedModel uses the information from the pre-trained model instead of randomizing it. Like Random the layers in the pre-trained model remain unchanged in TransferedModel and new layers are added to teach the model the new task. The information from the pre-trained model serves as a base for learning the new task and the model can learn the task more quickly without using much new data. It will usually outperform RandomModel for this reason.