## When does transfer learning make sense? Hint: watch the video. Does it make sense to do transfer learning from ImageNet to the Patch-CAMELYON dataset?

Transfer learning makes sense if the dataset you want to train your neural network on is not large enough, but there is a large dataset available of unrelated data that has the same input type. Besides this, the large dataset should also have low level features that could be used in the final model. [1] This way the neural network can be trained on the large dataset of unrelated. The weights of the model are now aimed towards, for instance images. This model can now be considered a basic outline for the model you want to make. The result being that the model is now more accurate than when it would only have been trained on the initial, small dataset.

In the case of the patch CAMELYON data, this would not be necessary. This dataset consists of 327.680 patches [2], which should be sufficient input data. Transfer learning could still be applied, since there is an abundance of image datasets but it is possible that doing so would not result any meaningful gain.

[1] Transfer Learning (C3W2L07) by Andrew Ng (used timestamps: 5:44, 8:50) <https://www.youtube.com/watch?v=yofjFQddwHE>

[2] Patch CAMELYON dataset homepage by Karl Pearson<https://github.com/basveeling/pcam>