**Project proposal**

I would like to do a project on disentangled representations, since my thesis will have a representation learning component to it. There is a publicly available dataset from the Google Deepmind github called dSprites, which consists of 737280 images in black and white of these “sprites” objects. The images are generated from 6 ground truth independent latent factors: color, shape, scale, orientation, X position and Y position. This dataset can be used as paired samples, as it contains many observations that have shared latent values. As such, I would like to implement the VAE for paired samples framework we saw to learn disentangles representations of the dSprites images.

I will evaluate my model performance with Mutual Information Gap (MIG) and I can contrast the different methods of when “k” is known and “k” is unknown.