Final project

Deliverable 2

The initial project is to create an image denoiser which takes as input an image/photo in bad quality for noisy and outputs it denoised and with a better resolution. To answer this problem, the goal is to implement an auto encoder which takes as input a photo with high quality puts it in low and noisy quality and then tries to output it back to a high quality image and then we fit the training data set to it.

I need data for the autoencoder then data to fit the model and then for testing and validation thus I chose images from several databases:
https://www.tensorflow.org/datasets/catalog/celeb_a_hq
https://data.vision.ee.ethz.ch/cvl/DIV2K/
However, I wasn't able to to extract the data for the second one which got me stuck with only the first data so I need to work on that...
For preprocessing, I changed the size of the images to be the same: 1400 x 1400 so that I could use the decoder on it

For the model, I used an autoencoder thanks to the library Keras and used CNN layers, I got inspired from the MNIST autoencoder but added more layers to fit the photos since they contain much more information.
I think the model will be overfitting since there are a lot of layers and will need to adjust accordingly. And once I get my code to work I will get my result for the mean squared error.