Unit Code: IU000133
03 / 2021

**UAL: Creative Computing Institute
Artificial Intelligence for the Media**
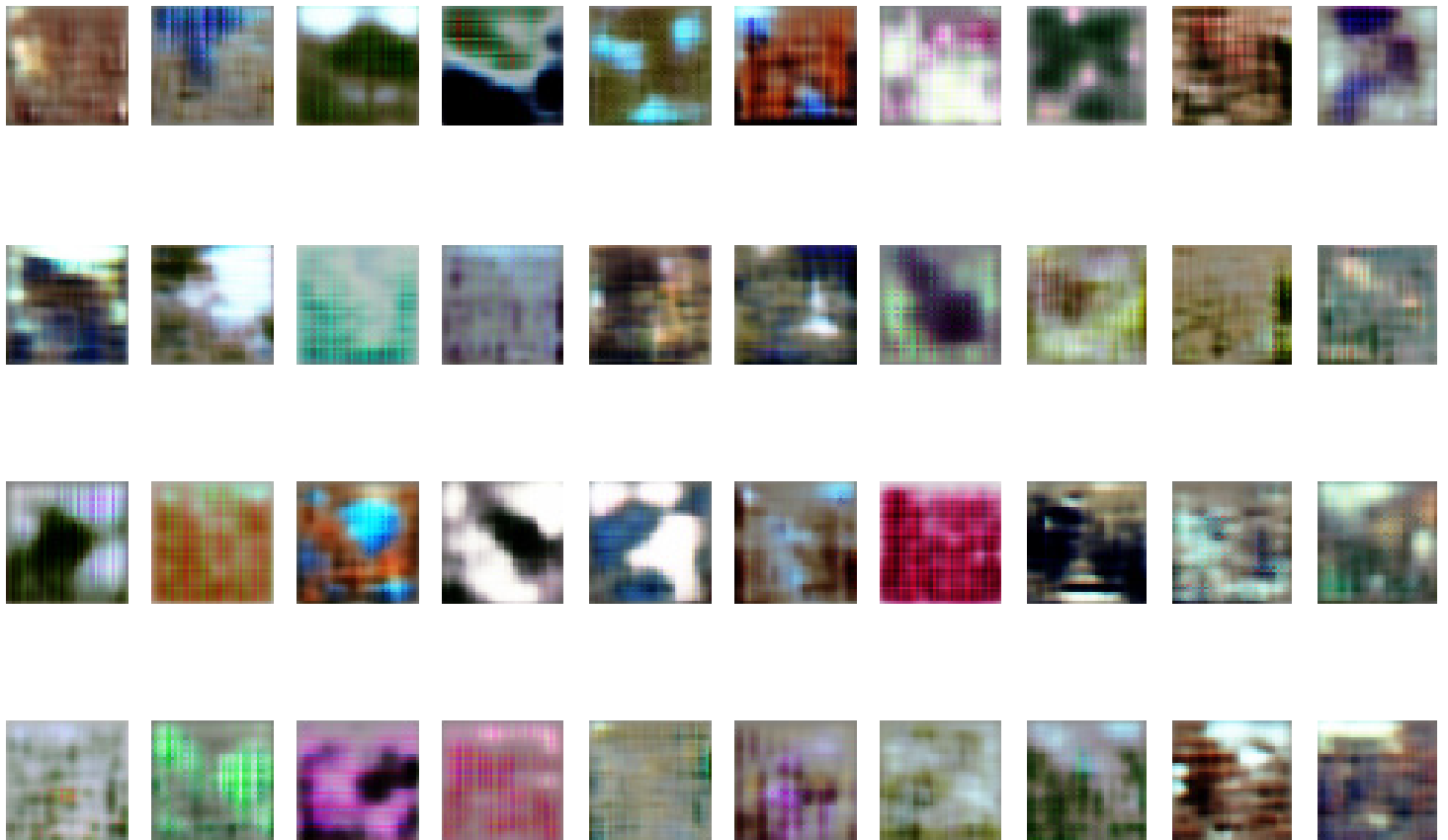
In-Class Assignment 3:
DCGAN

Training a DCGAN with a custom dataset
Provide written answers, along with any sample outputs
you would like to include in a report.

**Selected frames from the
model's output.**

**Whilst training the model will have saved one image at every epoch, in what
ways have the generated images changed over time as the model has de-
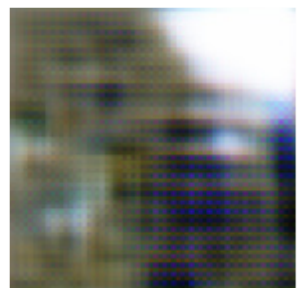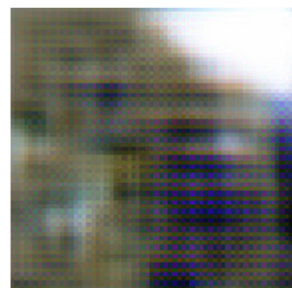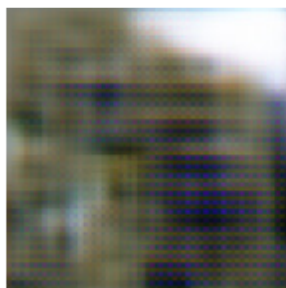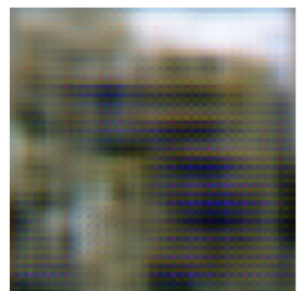creased its loss? Have they become more like the target dataset?**

For my dataset I chose a YouTube video including areal views of Iceland and a
video of jellyfish underwater. The video of the jellyfish had a consistent form, and
the video of Iceland was more complex. Regarding the jellyfish video it looked the
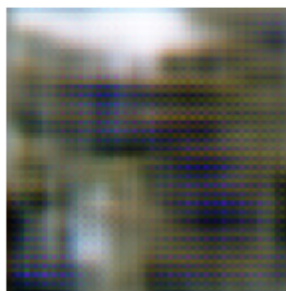least developed compared to the images from the video of Iceland. It looks like an
imbalance has occurred between the generator and the discriminator to be training
on all the datasets. Even for the best image output, as can be seen in the report,

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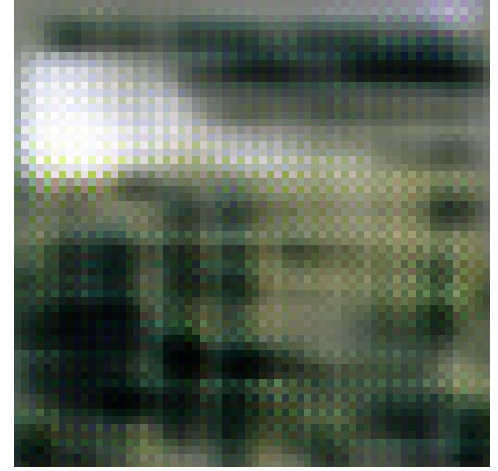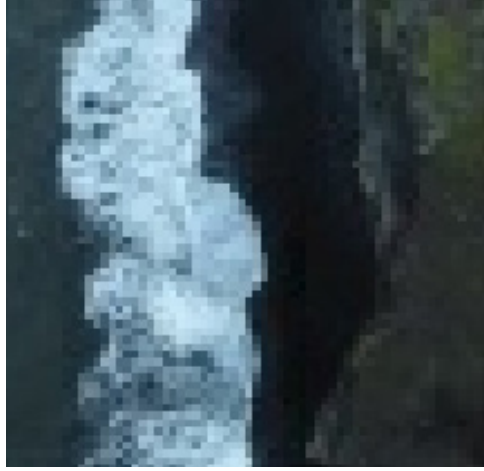they display what seems to be a GAN failure mode, probably Vanishing Gradients. This GAN displays failure to improve in the quality of the output. As well as that the loss of the discriminator 's training was too low from very early in the training.

Use the code given generate a set of images interpolated between two points in the latent space. Does it seem like images next to each other have similar qualities? If so, how?

The two images used to generate a set of images interpolated between two points seem to be of similar quality. However, they are quite vague but do indicate that the generator came close to generating the nature surroundings it had been trained to do or to make new examples by modelling them from the data distribution and identity after the dataset.

A set of images interpolated between two points in the latent space generate a set of images interpolated between two points in the latent space

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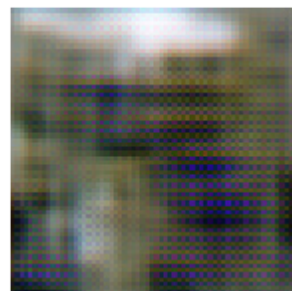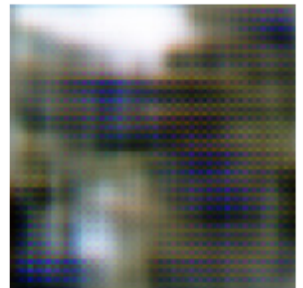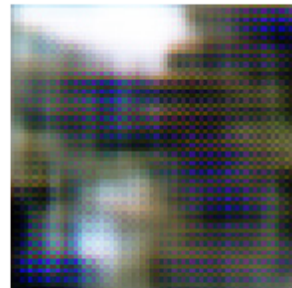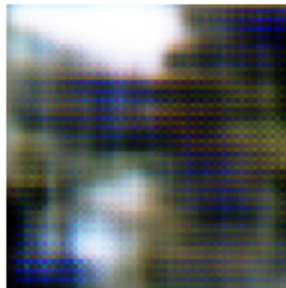
The GANs attempt to interpret the data seen to the left.

Describe a creative piece or creative industry use case in which this model might be useful. What are the advantages and disadvantages over current non generative methods?

Having experience of photoshop and having to generate material, GAN would solve many of those jobs well. An example of a creative industry where this model would be useful is the film industry. It enables scenes to be created without the need for specific movement or locations. The non-generative methods are more costly and time consuming but at the same time the model is computationally expensive.

References:

Josh Murr(unknown date). Source code. https://colab.research.google.com/github/Louismac/NLP-Public/blob/master/AI-4-Media-Assignment_3_GANs.ipynb