OASIS_brain_DCGAN.md

OASIS brain DCGAN

This library utilizes DCGAN structure in Tensorflow to attempt to produce OASIS brain segment slice images.

Dependencies

Before usage instructions can begin, dependencies need to be presented as for the user to install. With your choice of environment initialises, the following dependencies need to be added:

- Tensorflow / tensorflow-gpu - If the system you are utilising has a GPU, then Tensorflow-GPU is the best option, otherwise Tensorflow.
- Pillow - Image processing library
- Numpy

Usage

Before usage steps can be listed, it is important to understand how folder structures need to be arranged in order for correct processing. Data that is going to be loaded into the GAN will need to be of the following folder structure:

```
└──keras_png_slices_data
    └──keras_png_slices_data
        ├──keras_png_slices_seg_test
        ├──keras_png_slices_seg_train
        ├──keras_png_slices_seg_validate
        ├──keras_png_slices_test
        ├──keras_png_slices_train
        └──keras_png_slices_validate
```

Furthermore, the parent directory of "keras_png_slices_data" must not contain any files/folders with the name of "gen_images". If there does exist such directory, all contents will be erased when this model is run. With this established, usage steps can now begin. Take for example, the above folder structure is located in :

```
C:\Users\lains\Downloads
```

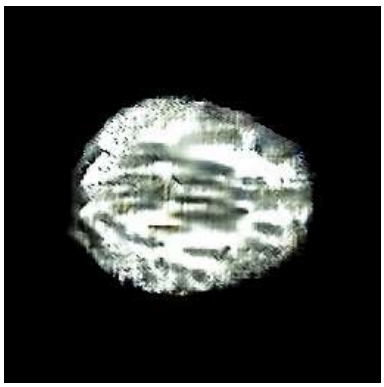
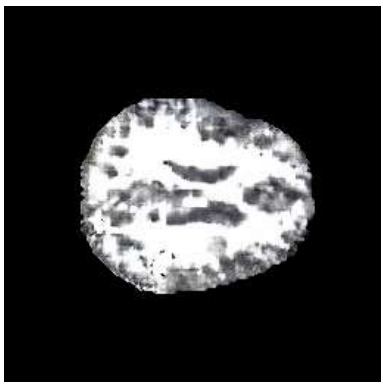
Now, navigating to the directory of which this model is located, the following command must be run:

```
python main.py "C:\Users\lains\Downloads"
```

Results

The following results were achieved for their respective epoch:

Epoch	Produced Image

Epoch	Produced Image
1 epoch	
551 epoch	
235 epoch	
515 epoch	
550 epoch	

References

Tensorflow

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