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## BEGAN in Tensorflow

Tensorflow implementation of BEGAN: Boundary Equilibrium Generative Adversarial Networks.

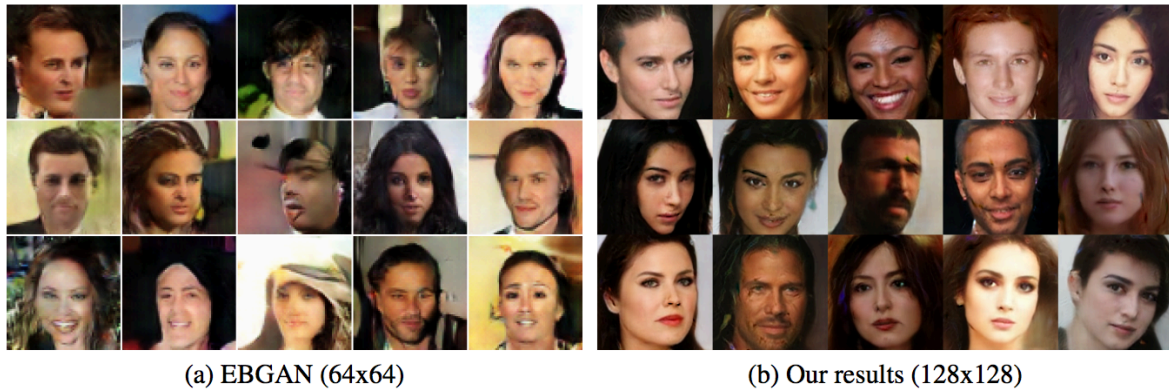


Figure 2: Random samples comparison



Figure 3: Random 64x64 samples at varying diversities  $\gamma \in \{0.3, 0.5, 0.7\}$

## Requirements

- Python 2.7 or 3.x
- Pillow
- tqdm
- requests (Only used for downloading CelebA dataset)
- TensorFlow 1.3.0

## Usage

First download CelebA datasets with:

```
1 $ apt-get install p7zip-full # ubuntu
2 $ brew install p7zip # Mac
```

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```
3 $ python download.py
```

or you can use your own dataset by placing images like:

```
1 data ─
2 YOUR_DATASET_NAME ─
3     xxx.jpg (name doesn't matter) ─
4     yyy.jpg ─
5     ...
```

To train a model:

```
1 $ python main.py --dataset=CelebA --use_gpu=True
2 $ python main.py --dataset=YOUR_DATASET_NAME --use_gpu=True
```

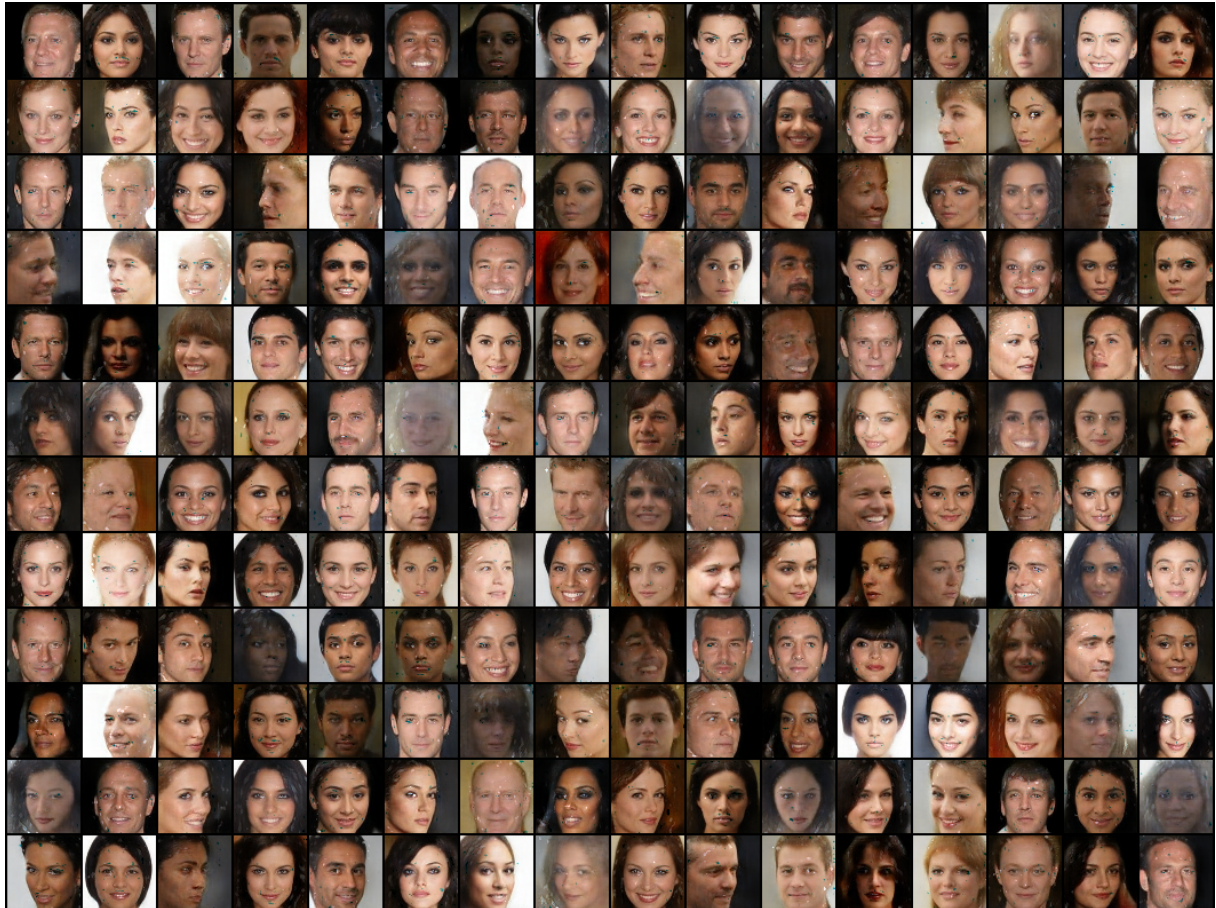
To test a model (use your `load_path`):

```
1 $ python main.py --dataset=CelebA --load_path=CelebA_0405_124806 --
    use_gpu=True --is_train=False --split valid
```

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## Results

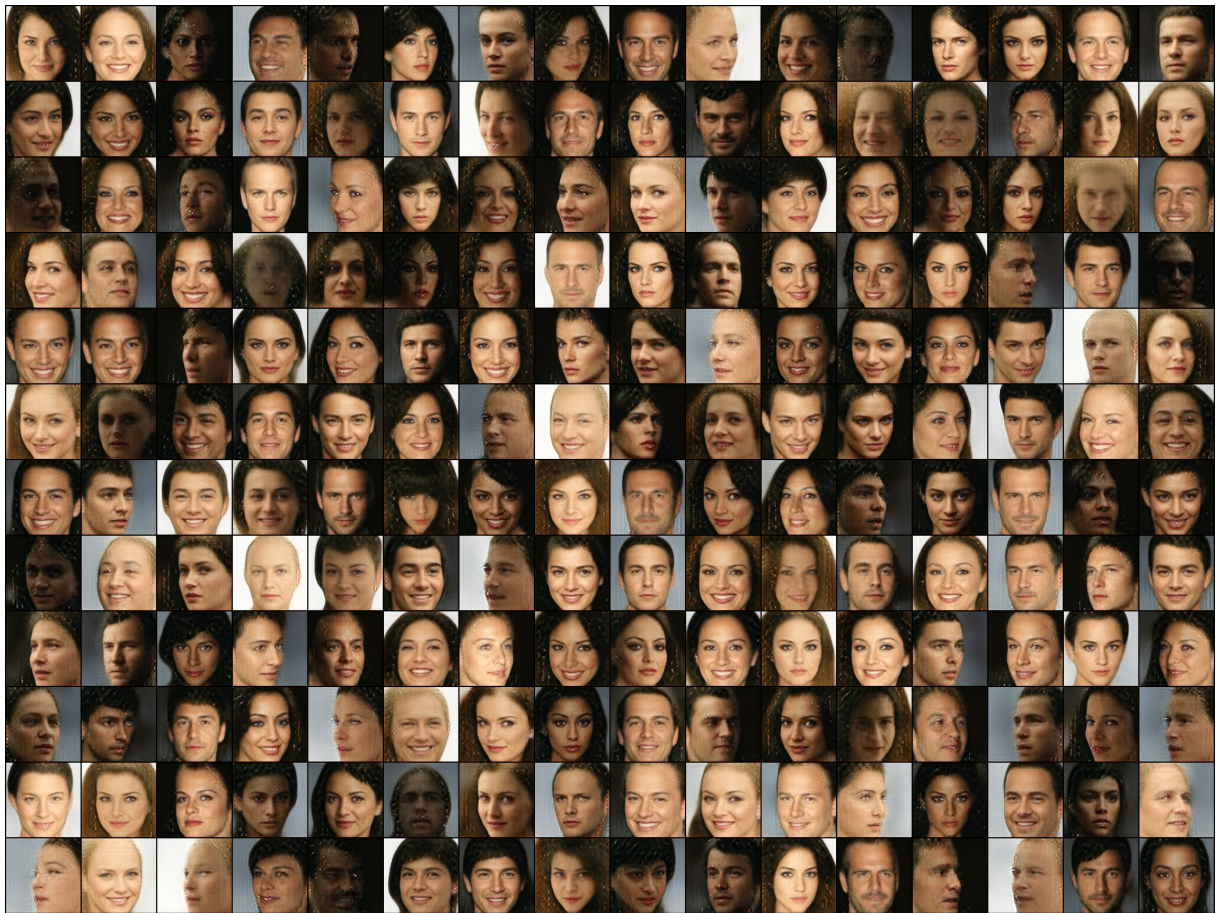
Generator output (64x64) with  $\gamma=0.5$  after 300k steps





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**Generator output (128x128) with gamma=0.5 after 200k steps**



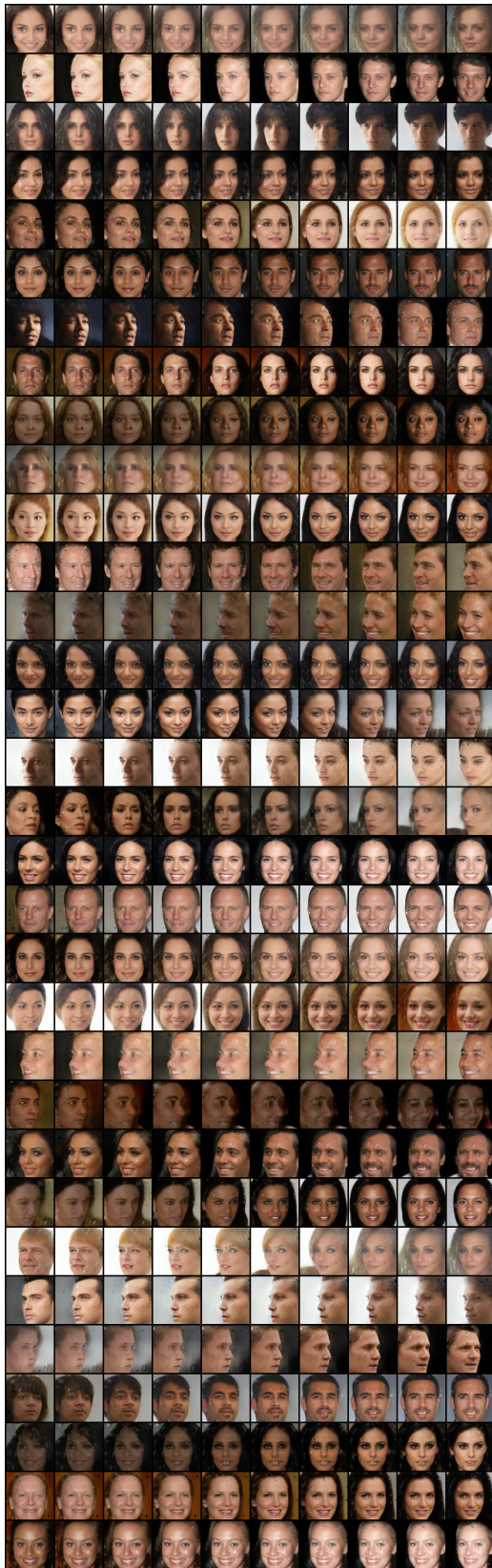


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**Interpolation of Generator output (64x64) with  $\gamma=0.5$  after 300k steps**

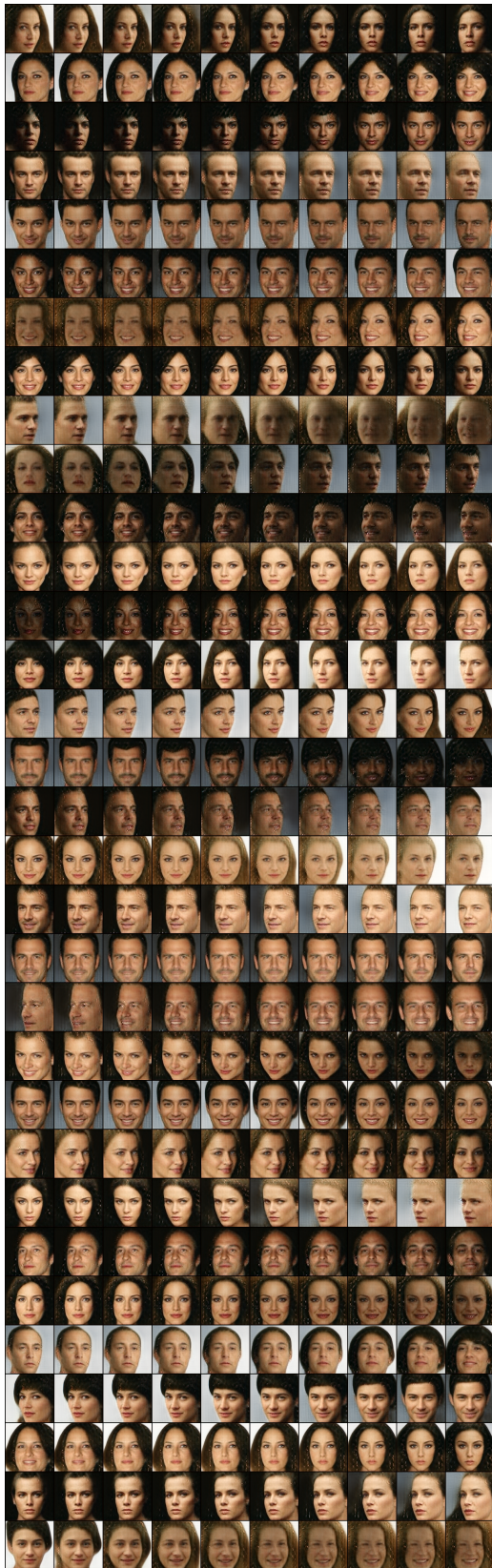


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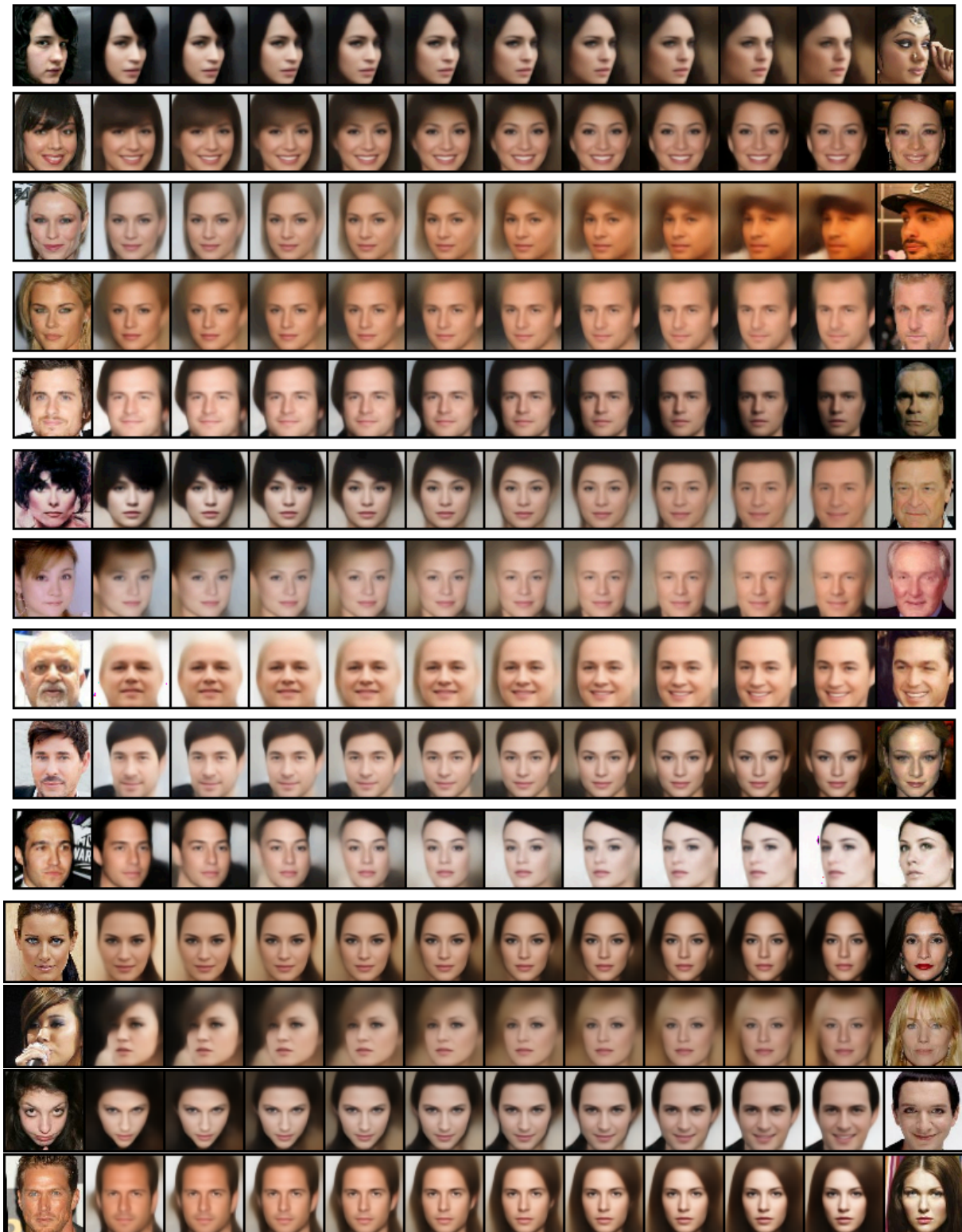
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**Interpolation of Generator output (128x128) with gamma=0.5 after 200k steps**



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## Interpolation of Discriminator output of real images







## Related works

- DCGAN-tensorflow
- DiscoGAN-pytorch
- simulated-unsupervised-tensorflow

## Author

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