understanding_inputs

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```python
[1]: import h5py
     import os

     print("cwd", os.getcwd())
```

cwd /Users/haardshah/development/gatech/cvnlp_research/Text-to-Image-Synthesis

```python
[14]: import numpy as np
```

```python
[29]: import os
      import io
      from torch.utils.data import Dataset, DataLoader
      import h5py
      import numpy as np
      import pdb
      from PIL import Image
      import torch
      from torch.autograd import Variable
      import pdb
      import torch.nn.functional as F
```

```python
[4]: birds_hd5_path = 'Birds dataset/birds.hdf5'
     data = h5py.File(birds_hd5_path, mode='r')
```

```python
[5]: data.keys()
```

```python
[5]: <KeysViewHDF5 ['test', 'train', 'valid']>
```

```python
[8]: first_name = [str(k) for k in data['train'].keys()][0]
```

```python
[9]: first_name
```

```python
[9]: 'American_Goldfinch_0001_32306_0'
```

```python
[10]: sample = data['train'][first_name]
```

```python
[11]: sample.keys()
```

```
[11]: <KeysViewHDF5 ['class', 'embeddings', 'img', 'name', 'txt']>
```

0.1 Caption (txt), name, and class

```python
[47]: # sample['name']
      np.array(sample['name']).astype(str) # useless
```

```
[47]: array('American_Goldfinch_0001_32306', dtype='<U29')
```

```python
[15]: # sample['txt']
      np.array(sample['txt']).astype(str)
```

```
[15]: array('this bird is yellow with black and has a long, pointy beak.\n',
            dtype='<U60')
```
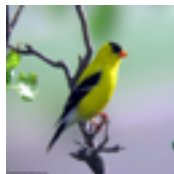
```python
[25]: # sample['class']
      np.array(sample['class']).astype(str)
```

```
[25]: array('047.American_Goldfinch', dtype='<U22')
```

0.2 Image

```python
[36]: img = bytes(np.array(sample['img']))
      img = Image.open(io.BytesIO(img))
      # img # to view image
      resized_img = img.resize((64,64))
      resized_img # smaller image
```

[36]:

0.2.1 Validate image (from txt2image_dataset.py)

```python
[42]: arr_img = np.array(resized_img, dtype=float)
      arr_img.shape
```

```
[42]: (64, 64, 3)
```

```python
[43]: arr_img.transpose(2, 0, 1).shape
```

```
[43]: (3, 64, 64)
```

```
[44]: validated_img = arr_img.transpose(2, 0, 1)
```

0.3 Embeddings

```
[48]: sample['embeddings']
```

```
[48]: <HDF5 dataset "embeddings": shape (1024,), type "<f4">
```

```
[56]: embed = np.array(sample['embeddings'], dtype=float)
      print(embed)
```

```
[-0.10290982   0.12675285   0.09818752 … -0.05504847 -0.02622498
 -0.03597182]
```

```
[ ]:
```