Mid-Term Project

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Neural Filling

• Fill the blanks in the MNIST images
Sizes

- 7
- 28 x 28
Putting Holes

• Generate train data from the original MNIST data.
• It’s highly recommended to use the code on the right.

```python
def put_hole(images):
    # shape of images : num_data * 728
    new_images = np.zeros(images.shape)
    for i in xrange(images.shape[0]):
        new_images[i] = images[i]
        img = new_images[i].reshape(28, 28)
        x = np.random.randint(21)
        y = np.random.randint(21)
        img[x:x+7, y:y+7] = 0
        new_images[i] = img.reshape(28*28)
    return new_images
```
Candidate Model

• Convolutional Autoencoder
Evaluation

- Test data will be uploaded on our homepage
  - The data is formatted in pickle
- Evaluation is based on mean square error and soundness of your code

```python
import numpy as np
import cPickle as pickle

with open('mnist_hole_test.pkl', 'rb') as f:
    images = pickle.load(f)['images']

print(images.shape)
plt.imshow(images[0], cmap='gray')
plt.show()
```

This is just an example!!
Submission

• Save your answer data as pickle
  • shape: 1000(data_num), 28(height), 28(width)
  • filename: answer.pkl

```python
import cPickle as pickle
print images.shape

with open('answer.pkl', 'wb') as f:
    pickle.dump({'images': images}, f)
```

(1000, 28, 28)

• Compress your codes and answer.pkl and upload on ETL.
• Due Date: 23:55, 28, Oct(Fri)
Questions?

• TA mail: hnkwak@bi.snu.ac.kr  <- do not omit bi