

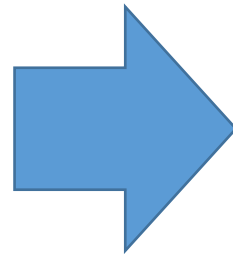
Mid-Term Project

Hanock Kwak

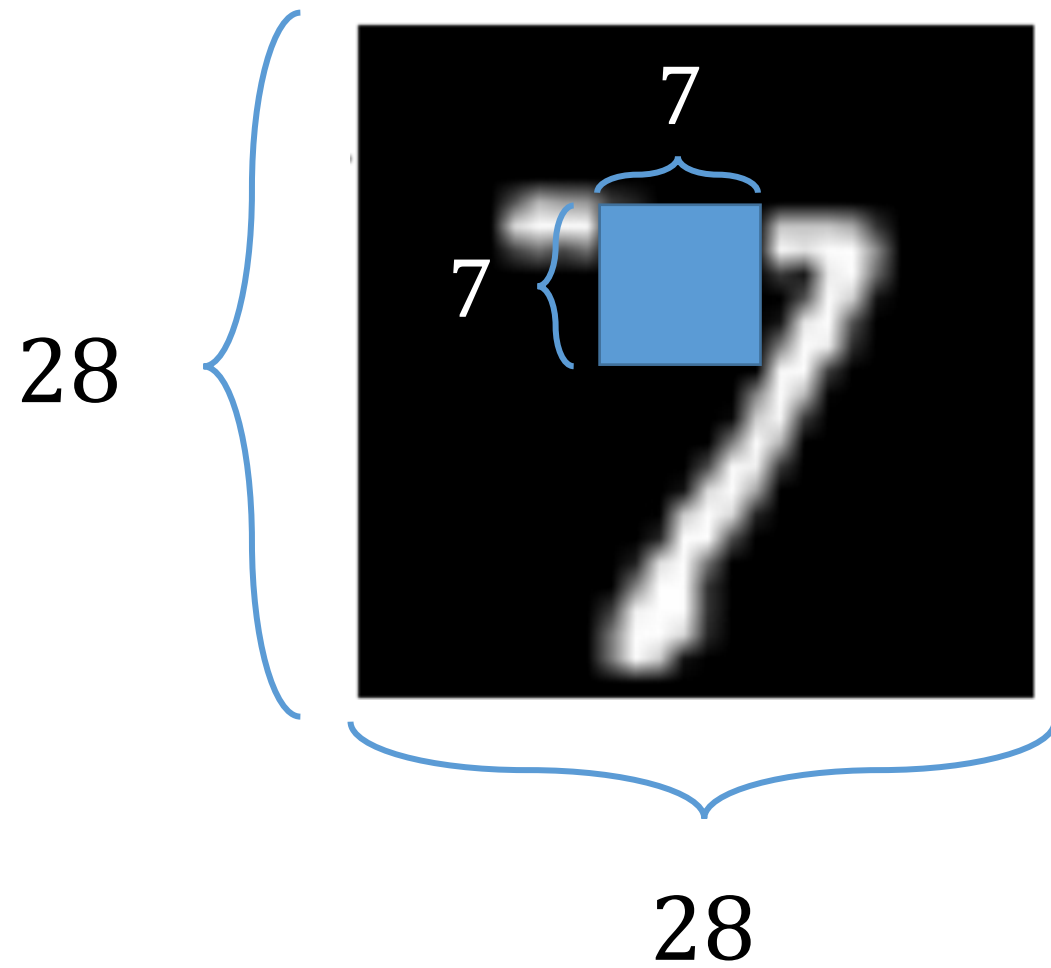
2016-10-06

Neural Filling

- Fill the blanks in the MNIST images



Sizes



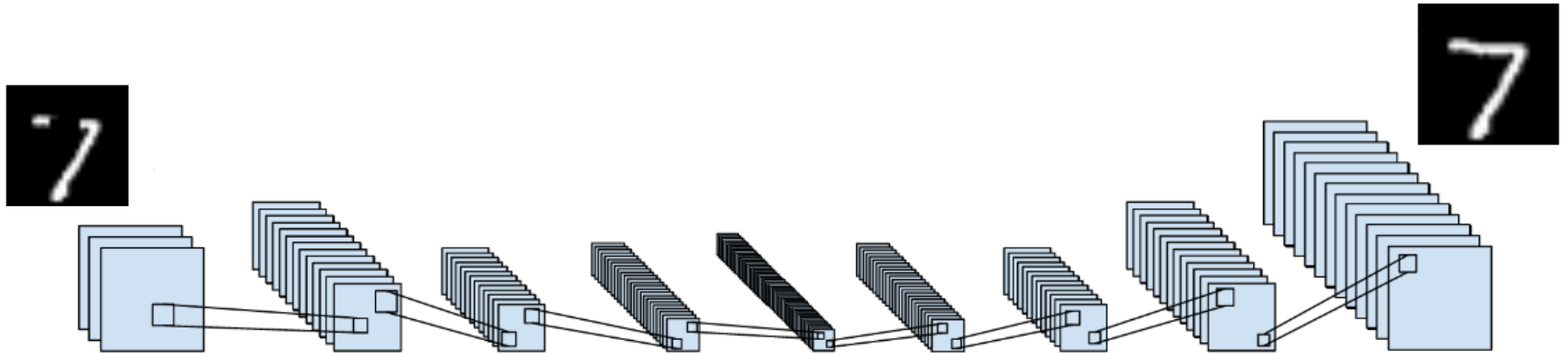
Putting Holes

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

```
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

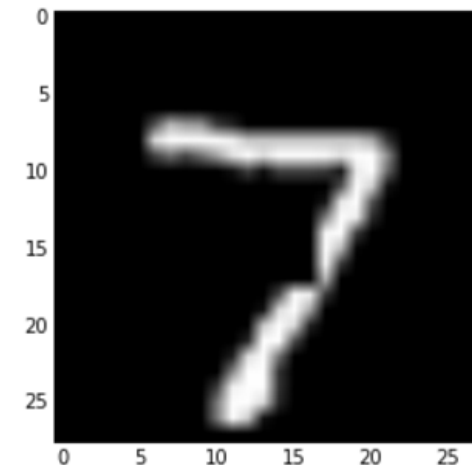
This is just an example!!

```
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()
```

(1000, 28, 28)



Submission

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

```
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: hnikwak@bi.snu.ac.kr <- do not omit **bi**