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Untitled3.ipynb

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sample_data input.mat output.mat

1. Open a new notebook in google colab;

2. Upload data here:
two .mat files.

3. Paste the code in 'DNN_train monopoly.py' to this area

4. Run the code

```
##### Loading data from .mat file
##### Note: you can also use .csv or .txt, etc. files, it is easy to find code of loading them online.
import scipy.io
x = scipy.io.loadmat('input.mat')
y = scipy.io.loadmat('output.mat')
x = x['shuru']
y = y['shuchu']

##### Processing data
import numpy as np
from random import shuffle
x = np.transpose(x)
y = np.transpose(y)
##### transform from log10 to scalar
##### Note: you can also remove this step.
y = 10**(y/10)
##### shuffle
index = np.arange(x.shape[0])
shuffle(index)
x = x[index, :]
y = y[index, :]
##### divide to train, test, and validation data = 7:1:2
##### Note: it is ok to divide into other ratio
xtrain = x[:int(0.7*x.shape[0]), :]
xtest = x[int(0.7*x.shape[0]):int(0.8*x.shape[0]), :]
xval = x[int(0.8*x.shape[0]):, :]
ytrain = y[:int(0.7*y.shape[0]), :]
ytest = y[int(0.7*y.shape[0]):int(0.8*y.shape[0]), :]
yval = y[int(0.8*y.shape[0]):, :]

##### normalize input data
##### Note: you can also use other normalization method
xmean1 = np.mean(xtrain)
xstd1 = np.std(xtrain)
xmean2 = np.mean(xtest)
xstd2 = np.std(xtest)
xmean3 = np.mean(xval)
xstd3 = np.std(xval)

xtrain_norm = (xtrain-xmean1)/xstd1
xtest_norm = (xtest-xmean1)/xstd1
xval_norm = (xval-xmean1)/xstd1

##### normalize output data
##### Note: you can also use other normalization method
ymean1 = np.mean(ytrain)
ystd1 = np.std(ytrain)
ymean2 = np.mean(ytest)
ystd2 = np.std(ytest)
ymean3 = np.mean(yval)
ystd3 = np.std(yval)

ytrain_norm = (ytrain-ymean1)/ystd1
ytest_norm = (ytest-ymean1)/ystd1
yval_norm = (yval-ymean1)/ystd1

##### build a model
```

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