Matlab matrix II

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Notebook

Data

Output

Comments

Data Sources

- Fruits 360 dataset
  - fruits-360
    - LICENSE
    - papers
      - fruit_recognition_deep_learning.pdf
    - readme.md
    - Test
      - Apple Braeburn
        - 321_100.jpg
        - 322_100.jpg
        - 323_100.jpg
        - 324_100.jpg

Fruits 360 dataset

A dataset with 75 fruits and 50590 images

Last Updated: a year ago (Version 1 of 62)

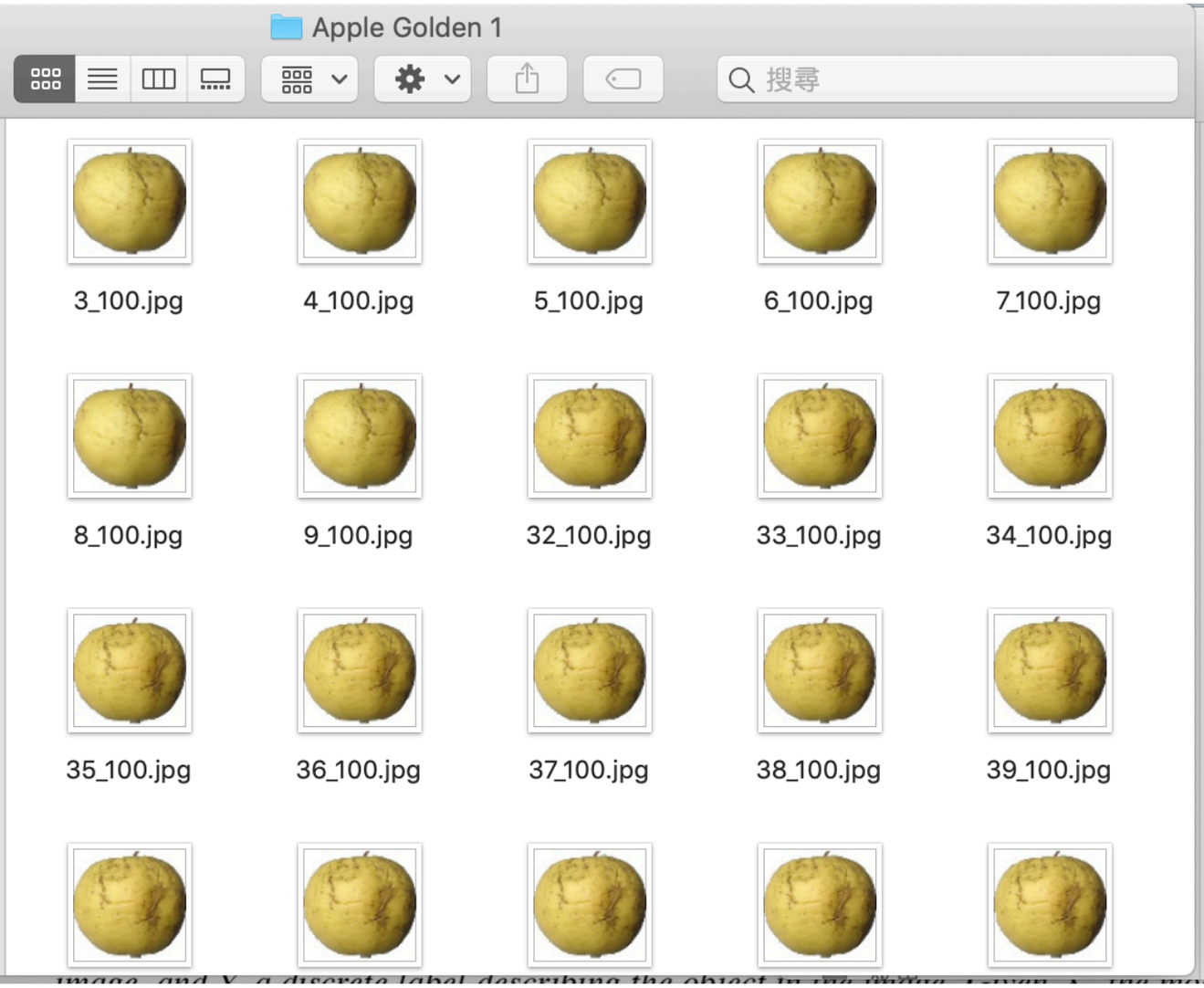
About this Dataset

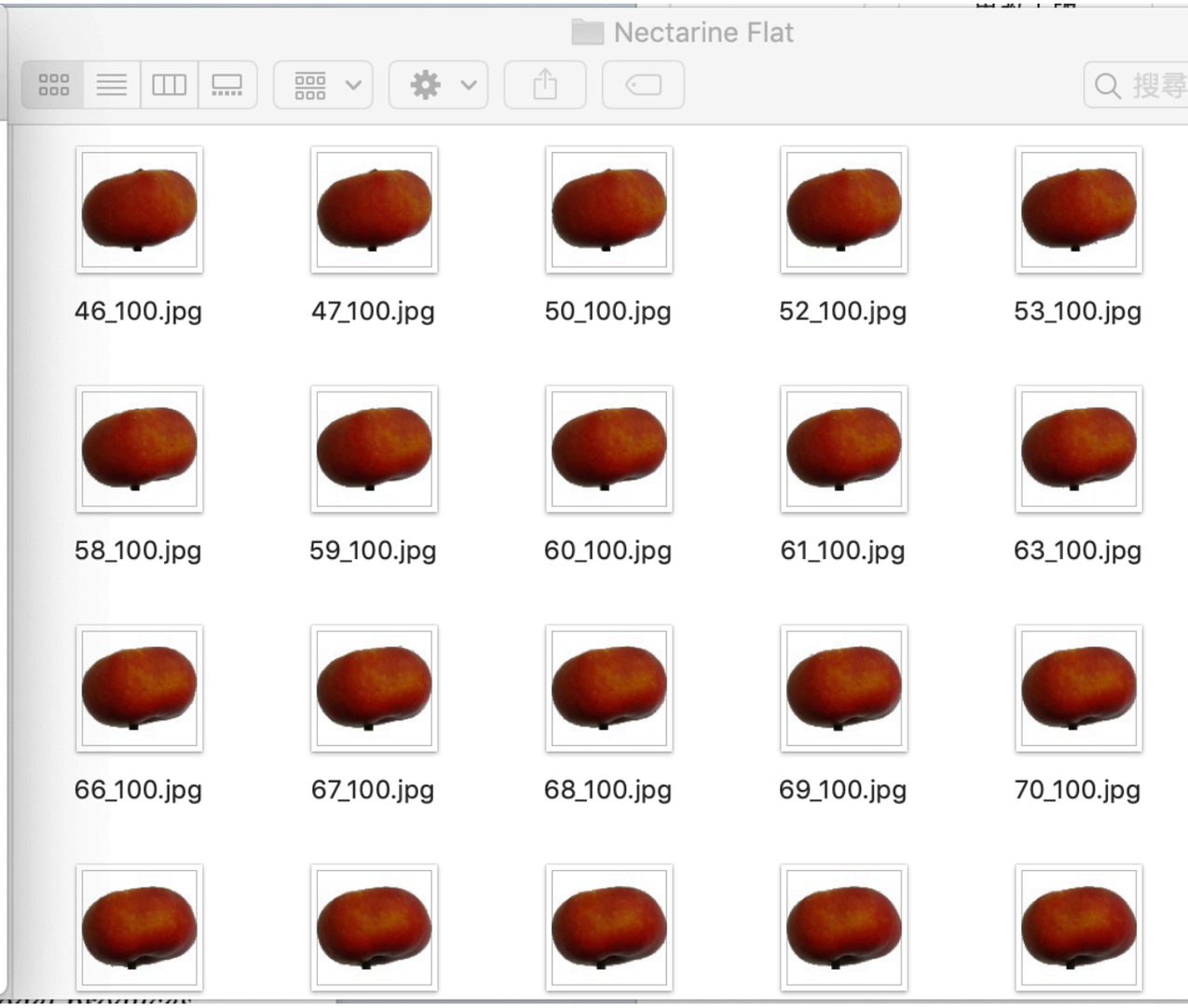
Fruits 360 dataset: A dataset of images containing fruits

Version: 2018.07.01.0

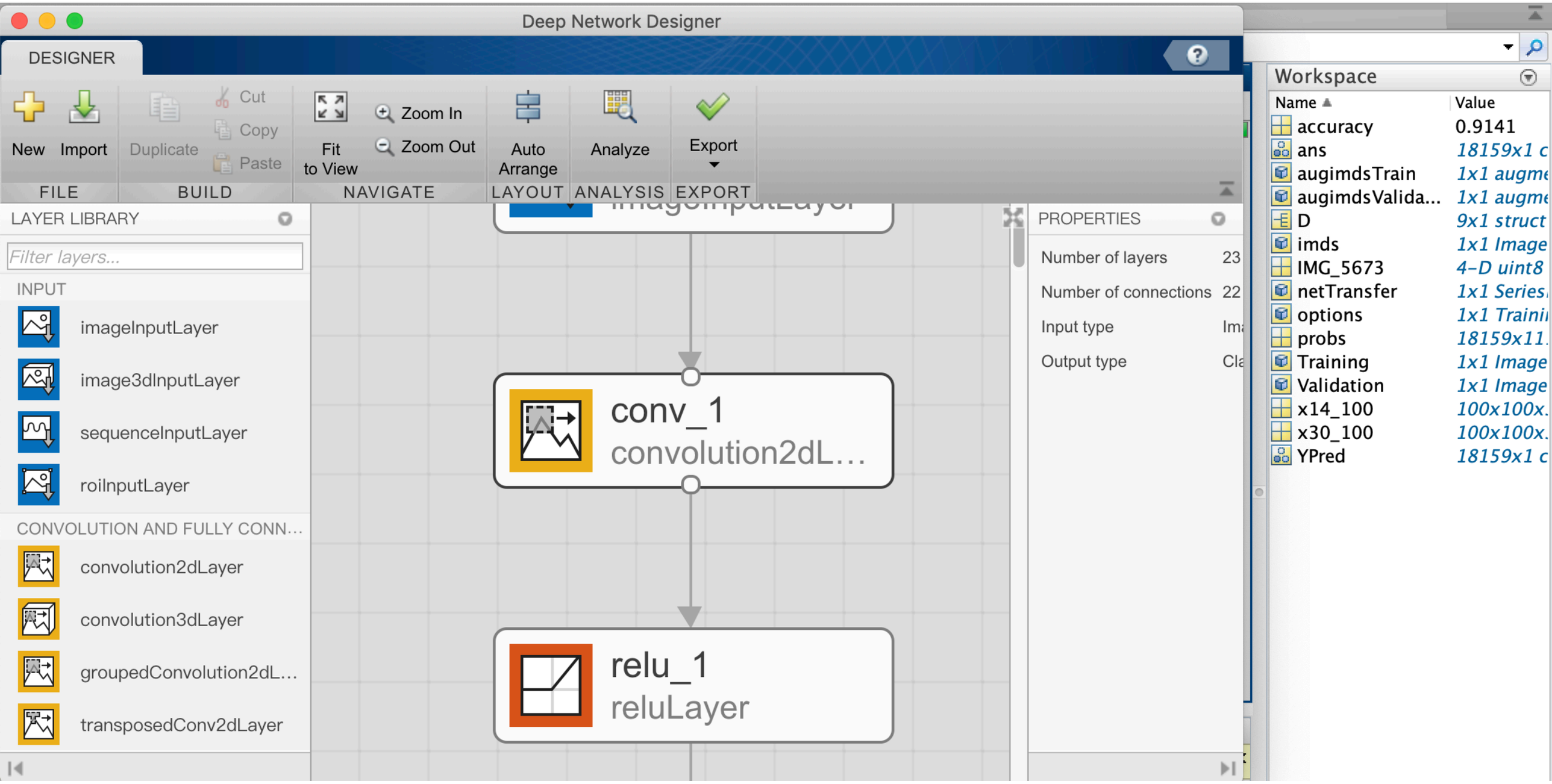
Content

The following fruits are included: Apples (different varieties: Golden, Golden-Red, Granny Smith, Red, Red Delicious), Apricot, Avocado, Avocado ripe,


Apple Golden 1
搜尋
3_100.jpg
4_100.jpg
5_100.jpg
6_100.jpg
7_100.jpg
8_100.jpg
9_100.jpg
32_100.jpg
33_100.jpg
34_100.jpg
35_100.jpg
36_100.jpg
37_100.jpg
38_100.jpg
39_100.jpg


Nectarine Flat
搜尋
46_100.jpg
47_100.jpg
50_100.jpg
52_100.jpg
53_100.jpg
58_100.jpg
59_100.jpg
60_100.jpg
61_100.jpg
63_100.jpg
66_100.jpg
67_100.jpg
68_100.jpg
69_100.jpg
70_100.jpg

```
load('matlab_train.mat')
import netTransfer using Deep Network Designer
```

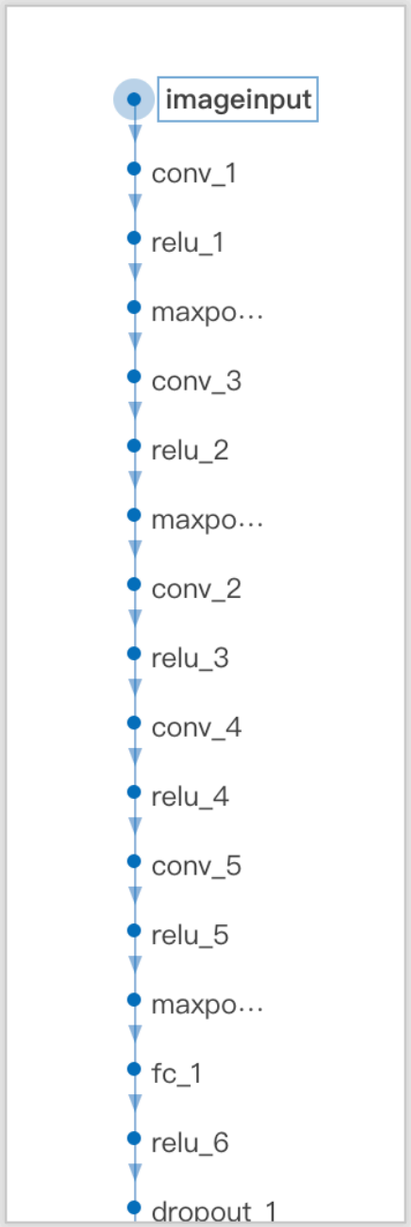


Deep Learning Network Analyzer

Network from Deep Network Designer

Analysis date: 04–Oct–2019 00:08:46

23 layers | 0 warnings | 0 errors



ANALYSIS RESULT

	Name	Type	Activations	Learnables
1	imageinput 100x100x3 images	Image Input	100×100×3	-
2	conv_1 96 11x11x3 convolutions with stride [4 4] and padding [0 0 0 0]	Convolution	23×23×96	Weights 11×11×3×96 Bias 1×1×96
3	relu_1 ReLU	ReLU	23×23×96	-
4	maxpool_1 3x3 max pooling with stride [2 2] and padding [0 0 0 0]	Max Pooling	11×11×96	-
5	conv_3 256 5x5x96 convolutions with stride [1 1] and padding 'same'	Convolution	11×11×256	Weights 5×5×96×256 Bias 1×1×256
6	relu_2 ReLU	ReLU	11×11×256	-
7	maxpool_2 3x3 max pooling with stride [2 2] and padding [0 0 0 0]	Max Pooling	5×5×256	-
8	conv_2 384 3x3x256 convolutions with stride [1 1] and padding 'same'	Convolution	5×5×384	Weigh… 3×3×256×3… Bias 1×1×384
9	relu_3 ReLU	ReLU	5×5×384	-
10	conv_4 384 3x3x384 convolutions with stride [1 1] and padding 'same'	Convolution	5×5×384	Weigh… 3×3×384×3… Bias 1×1×384
11	relu_4 ReLU	ReLU	5×5×384	-
12	conv_5 256 3x3x384 convolutions with stride [1 1] and padding 'same'	Convolution	5×5×256	Weigh… 3×3×384×2… Bias 1×1×256
13	relu_5 ReLU	ReLU	5×5×256	-
14	maxpool_3 3x3 max pooling with stride [2 2] and padding [0 0 0 0]	Max Pooling	2×2×256	-

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Current Folder

Name
- class_num.mat
- csv2h5.py
- fruit_testing.m
- fruit_testing.m~
- fruit_training.m
- keras_test.py
- keras_train.h5
- keras_train_keras_tes...
- keras & TensorFlow.key
- matlab_train.h5
- matlab_train.mat
- net2csv_flatten.m
- test_h5.m

Details

Select a file to view details

Editor - /Users/apple/Desktop/Jiann-Ming Wu/graduateStudent/to boss/fruit_testing.m

+6 | demo_en2_new.m | plot_Big_Nen_3D.m | access_big_nen_i.m | fruit_testing.m | test_h5.m

```
15          'InitialLearnRate', 1e-4, ...
16          'ValidationData', Validation, ...
17          'ValidationFrequency', 6, ...
18          'Verbose', false, ...
19          'ExecutionEnvironment', 'parallel', ...
20          'Plots', 'training-progress');
21      % start training our model
22      % netTransfer = trainNetwork(Training, net, options);
23      load('matlab_train.mat');
24
25      % validation
26      [YPred, probs] = classify(netTransfer, augimdsValidatior
27      accuracy = mean(YPred == Validation.Labels);
28      fprintf('testing accuracy %f5.4\n',accuracy);
```

Command Window

New to MATLAB? See resources for Getting Started.

```
>> fruit_testing
testing accuracy 0.9141475.4
>>
```

Workspace

Name	Value
accuracy	0.9141
ans	18159x1 c
augimdsTrain	1x1 augme
augimdsValida...	1x1 augme
D	9x1 struct
imds	1x1 Image
IMG_5673	4-D uint8
netTransfer	1x1 Series
options	1x1 Traini
probs	18159x11
Training	1x1 Image
Validation	1x1 Image
x14_100	100x100x
x30_100	100x100x
YPred	18159x1 c

Turing Award 2018

Geoffrey E Hinton

GEOFFREY HINTON AND YANN LECUN TO DELIVER TURING LECTURE AT FCRC 2019

June 23, 5:15 - 6:30 P.M., Symphony Hall

We are pleased to announce that Geoffrey Hinton and Yann LeCun will deliver the Turing Lecture at FCRC 2019. Hinton's talk, "The Deep Learning Revolution," and LeCun's talk, "The Deep Learning Revolution: The Sequel," will be presented June 23rd from 5:15-6:30pm in Symphony Hall, Phoenix, Arizona.

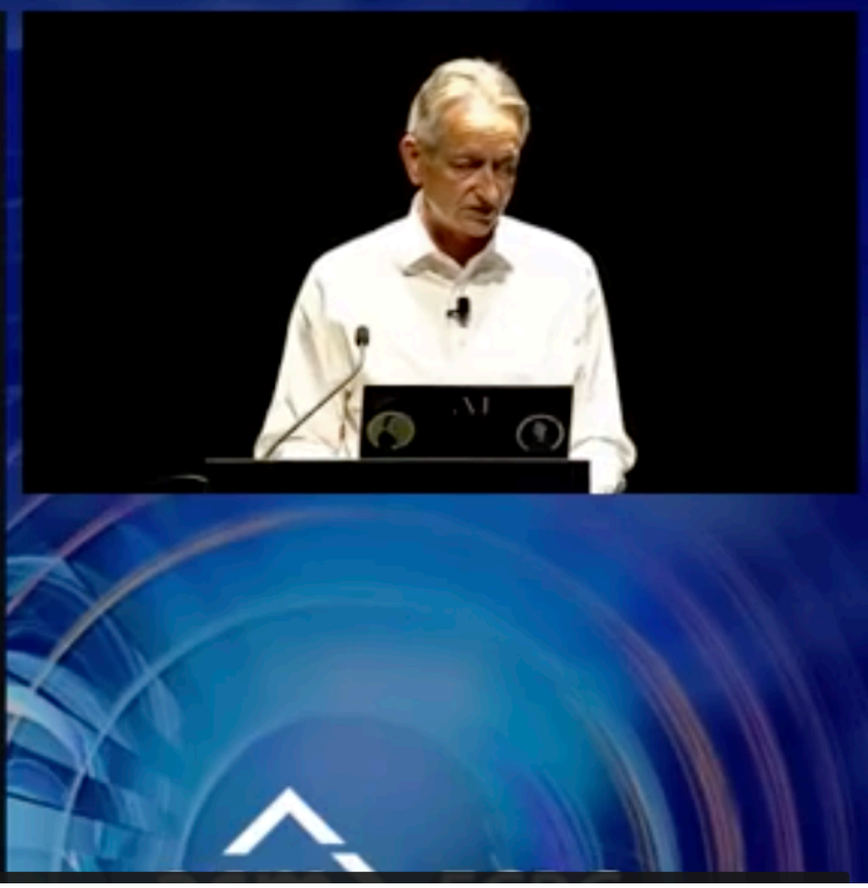
No registration or tickets necessary to attend.

View the Livestream

Association for Computing Machinery (ACM)
1.8萬 位訂閱者
訂閱
Award Lecture "The Deep Learning Revolution"
稍後觀看
分享

Two views of internal representations

- Internal representations are symbolic expressions.
  - A programmer can give them to a computer using an unambiguous language.
  - New representations can be derived by applying rules to existing representations.
- Internal representations are nothing like language.
  - They are large vectors of neural activity.
  - They have direct causal effects on other vectors of neural activity.
  - These vectors are learned from data.



1 : i * j 可產生一個向量，請使用reshape指令將向量 1 : i * j 的內容轉為具備i個橫列，j個直列的矩陣

Command Window

```
>> i = 3;
>> j = 4;
>>
```

```
ans =

     1     4     7    10
     2     5     8    11
     3     6     9    12
```

變數A為具備i個橫列，j個直列的矩陣，請將A矩陣的第2個橫列取出，儲存在B向量

```
>> i = 3;
>> j = 4;
>> A = reshape(1 : i * j, i, j);
>> B = A(
```

```
B =

     2     5     8    11
```

變數A為具備i個橫列，j個直列的矩陣，請將A矩陣的第2個直列取出，儲存在C向量

```
>> i = 3;
>> j = 4;
>> A = reshape(1 : i * j, i, j);
>> C = A(:,2)

C =

     4
     5
     6
```

變數A為具備i個橫列，j個直列的矩陣，從A矩陣取出兩個直列，並更新矩陣A的內容

```
>> i = 3;
>> j = 4;
>> A = reshape(1 : i * j, i, j);
>> A = A
```

```
A =

     7     4
     8     5
     9     6
```

變數A為具備i個橫列，j個直列的矩陣，從矩陣A取出一個子矩陣，並覆蓋矩陣A的內容

```
>> i = 4;
>> j = 9;
>> A = reshape(1 : i * j, i, j);
>> A = A
```

```
A =

    10    14    18    22
    11    15    19    23
    12    16    20    24
```

變數A為具備2個橫列，2個直列的矩陣，以重複矩陣指令repmat，複製A矩陣，並將複製結果儲存在B矩陣

Command Window

```
>> A = [1 2;3 4];
>> a = 3; b = 4;
>> B =
```

```
B =

     1     2     1     2     1     2     1     2
     3     4     3     4     3     4     3     4
     1     2     1     2     1     2     1     2
     3     4     3     4     3     4     3     4
     1     2     1     2     1     2     1     2
     3     4     3     4     3     4     3     4
```

變數A為具備4個橫列，4個直列的矩陣，使用變數 a、b、c，自矩陣A取出3個橫列，形成以下矩陣

```
>> A = reshape(1 : 16, 4, 4);
>> a = 3; b = 1; c = 2;
>> A
```

```
ans =

     3     7    11    15
     1     5     9    13
     2     6    10    14
```

變數A為具備4個橫列，4個直列的矩陣，使用變數 a、b、c，自矩陣A取出3個直列，形成以下矩陣

```
>> A = reshape(1 : 16, 4, 4);
>> a = 1; b = 2; c = 3;
>> A
```

```
ans =

     9     1     5
    10     2     6
    11     3     7
    12     4     8
```

變數V為具備3個橫列，4個直列的矩陣，請完成以下指令，將矩陣V的第2橫列與第3橫列對調

```
>> V=reshape(1:12,3,4);
>> V([3 2],:)=V

V =

     1     4     7    10
     3     6     9    12
     2     5     8    11
```

變數V為具備3個橫列，4個直列的矩陣，請將矩陣V的第2直列與第3直列對調

```
>> V=reshape(1:12,3,4);
>> V

V =

     1     7     4    10
     2     8     5    11
     3     9     6    12
```

變數V為具備3個橫列，4個直列的矩陣，請計算矩陣V的各直列總和

```
>> V=reshape(1:12,3,4);
>>
```

```
ans =

     6    15    24    33
```

變數V為具備3個橫列，4個直列的矩陣，請計算矩陣V的各橫列總和

```
>> V=reshape(1:12,3,4);
>> sum

ans =

    22
    26
    30
```

變數V為具備3個橫列，4個直列的矩陣，請計算矩陣V的各直列平均值

```
>> V=reshape(1:12,3,4);
>>
```

```
ans =

     2     5     8    11
```

變數V為具備3個橫列，4個直列的矩陣，請計算矩陣V的各橫列平均值

```
>> V=reshape(1:16,4,4);
>>
```

```
ans =

     7
     8
     9
    10
```