

Introduction to MNIST (Hand Written Digits Recognition)

HL

2020-9-14

Today's lecture material: [10-2020F-104-MNIST-Keras-HL-2018-2019-2-19-2020-9-14.pdf](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/10-2020F-104-MNIST-Keras-HL-2018-2019-2-19-2020-9-14.pdf)

The URL:

<https://github.com/hualili/opencv/blob/master/deep-learning-2020S/10-2020F-104-MNIST-Keras-HL-2018-2019-2-19-2020-9-14.pdf>

0. Show and Tell, in-class demo for the simple object tracker program

The code: [0-2020F-102simpleObjTra1cking-Chee-Vang.py](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/10-2020F-102simpleObjTracking-Chee-Vang.py)

The folder: [opencv/deep-learning-2020S/10-2020F-102simpleObjTracking-Chee-Vang.py](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/10-2020F-102simpleObjTracking-Chee-Vang.py) /

The URL: <https://github.com/hualili/opencv/blob/master/deep-learning-2020S/10-2020F-102simpleObjTracking-Chee-Vang.py>

1. Sample Python code of MNIST ConvNet for handwritten digits recognition

(1) The code for the handwritten digits recognition (to save trained model): [7-1convnets-NumeralDet-saveTrained.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-1convnets-NumeralDet-saveTrained.py)

The folder: [opencv/IP120-AI-DL/2018F/7-1convnets-NumeralDet-saveTrained.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-1convnets-NumeralDet-saveTrained.py) /

The URL of the file: <https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-1convnets-NumeralDet-saveTrained.py>

(2) The code for the handwritten digits recognition (to load the trained model): [7-2convnets-NumeralDet-loadTrained.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-2convnets-NumeralDet-loadTrained.py)

The folder: [opencv/IP120-AI-DL/2018F/7-2convnets-NumeralDet-loadTrained.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-2convnets-NumeralDet-loadTrained.py) /

The URL of the file: <https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-2convnets-NumeralDet-loadTrained.py>

(3) The code for resize input image (or video): [7-3ResizeImage.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-3ResizeImage.py)

The folder: [opencv/IP120-AI-DL/2018F/7-3ResizeImage.py](https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-3ResizeImage.py)

The URL of the file: <https://github.com/hualili/opencv/blob/master/IP120-AI-DL/2018F/7-3ResizeImage.py>

(4) The code for ROI localization: [5-ROI-video-rect-2clk-down.py](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/5-ROI-video-rect-2clk-down.py)
[5-ROI-video-poly.py](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/5-ROI-video-poly.py)

(one for rectangle ROI, the other is for arbitrary shaped polygon ROI)

The folder: [opencv/deep-learning-2020S/](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/5-ROI-video-rect-2clk-down.py)

The URL of the file: <https://github.com/hualili/opencv/blob/master/deep-learning-2020S/5-ROI-video-rect-2clk-down.py>

2. PPT for 2D Convolution

The file: [1-2020S-#2019S-23-2DConvolution-2019-2-4.pdf](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/1-2020S-#2019S-23-2DConvolution-2019-2-4.pdf)

The folder: [opencv/deep-learning-2020S/1-2020S-#2019S-23-2DConvolution-2019-2-4.pdf](https://github.com/hualili/opencv/blob/master/deep-learning-2020S/1-2020S-#2019S-23-2DConvolution-2019-2-4.pdf)

The URL of the file: <https://github.com/hualili/opencv/blob/master/deep-learning-2020S/1-2020S-%232019S-23-2DConvolution-2019-2-4.pdf>

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