ryanyxwang@Ryans-MacBook-Pro Code % ls

DigitalScreeni\_Tutorial README.md

ryanyxwang@Ryans-MacBook-Pro Code % cd DigitalScreeni\_Tutorial

ryanyxwang@Ryans-MacBook-Pro DigitalScreeni\_Tutorial % ls

Data Screen Shot 2022-05-26 at 13.38.27.png Unet\_nuclei\_tutorial.py

ryanyxwang@Ryans-MacBook-Pro DigitalScreeni\_Tutorial % python3 Unet\_nuclei\_tutorial.py

Resizing training images and masks

100%|███████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 670/670 [04:29<00:00, 2.49it/s]

Resizing test images

100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 65/65 [00:01<00:00, 44.27it/s]

Done!

2022-05-27 18:11:52.299014: I tensorflow/core/platform/cpu\_feature\_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX2 FMA

To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.

Model: "model"

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Layer (type) Output Shape Param # Connected to

==================================================================================================

input\_1 (InputLayer) [(None, 128, 128, 3) 0

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lambda (Lambda) (None, 128, 128, 3) 0 input\_1[0][0]

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conv2d (Conv2D) (None, 128, 128, 16) 448 lambda[0][0]

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dropout (Dropout) (None, 128, 128, 16) 0 conv2d[0][0]

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conv2d\_1 (Conv2D) (None, 128, 128, 16) 2320 dropout[0][0]

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max\_pooling2d (MaxPooling2D) (None, 64, 64, 16) 0 conv2d\_1[0][0]

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conv2d\_2 (Conv2D) (None, 64, 64, 32) 4640 max\_pooling2d[0][0]

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dropout\_1 (Dropout) (None, 64, 64, 32) 0 conv2d\_2[0][0]

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conv2d\_3 (Conv2D) (None, 64, 64, 32) 9248 dropout\_1[0][0]

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max\_pooling2d\_1 (MaxPooling2D) (None, 32, 32, 32) 0 conv2d\_3[0][0]

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conv2d\_4 (Conv2D) (None, 32, 32, 64) 18496 max\_pooling2d\_1[0][0]

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dropout\_2 (Dropout) (None, 32, 32, 64) 0 conv2d\_4[0][0]

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conv2d\_5 (Conv2D) (None, 32, 32, 64) 36928 dropout\_2[0][0]

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max\_pooling2d\_2 (MaxPooling2D) (None, 16, 16, 64) 0 conv2d\_5[0][0]

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conv2d\_6 (Conv2D) (None, 16, 16, 128) 73856 max\_pooling2d\_2[0][0]

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dropout\_3 (Dropout) (None, 16, 16, 128) 0 conv2d\_6[0][0]

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conv2d\_7 (Conv2D) (None, 16, 16, 128) 147584 dropout\_3[0][0]

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max\_pooling2d\_3 (MaxPooling2D) (None, 8, 8, 128) 0 conv2d\_7[0][0]

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conv2d\_8 (Conv2D) (None, 8, 8, 256) 295168 max\_pooling2d\_3[0][0]

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dropout\_4 (Dropout) (None, 8, 8, 256) 0 conv2d\_8[0][0]

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conv2d\_9 (Conv2D) (None, 8, 8, 256) 590080 dropout\_4[0][0]

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conv2d\_transpose (Conv2DTranspo (None, 16, 16, 128) 131200 conv2d\_9[0][0]

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concatenate (Concatenate) (None, 16, 16, 256) 0 conv2d\_transpose[0][0]

conv2d\_7[0][0]

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conv2d\_10 (Conv2D) (None, 16, 16, 128) 295040 concatenate[0][0]

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dropout\_5 (Dropout) (None, 16, 16, 128) 0 conv2d\_10[0][0]

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conv2d\_11 (Conv2D) (None, 16, 16, 128) 147584 dropout\_5[0][0]

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conv2d\_transpose\_1 (Conv2DTrans (None, 32, 32, 64) 32832 conv2d\_11[0][0]

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concatenate\_1 (Concatenate) (None, 32, 32, 128) 0 conv2d\_transpose\_1[0][0]

conv2d\_5[0][0]

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conv2d\_12 (Conv2D) (None, 32, 32, 64) 73792 concatenate\_1[0][0]

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dropout\_6 (Dropout) (None, 32, 32, 64) 0 conv2d\_12[0][0]

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conv2d\_13 (Conv2D) (None, 32, 32, 64) 36928 dropout\_6[0][0]

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conv2d\_transpose\_2 (Conv2DTrans (None, 64, 64, 32) 8224 conv2d\_13[0][0]

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concatenate\_2 (Concatenate) (None, 64, 64, 64) 0 conv2d\_transpose\_2[0][0]

conv2d\_3[0][0]

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conv2d\_14 (Conv2D) (None, 64, 64, 32) 18464 concatenate\_2[0][0]

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dropout\_7 (Dropout) (None, 64, 64, 32) 0 conv2d\_14[0][0]

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conv2d\_15 (Conv2D) (None, 64, 64, 32) 9248 dropout\_7[0][0]

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conv2d\_transpose\_3 (Conv2DTrans (None, 128, 128, 16) 2064 conv2d\_15[0][0]

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concatenate\_3 (Concatenate) (None, 128, 128, 32) 0 conv2d\_transpose\_3[0][0]

conv2d\_1[0][0]

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conv2d\_16 (Conv2D) (None, 128, 128, 16) 4624 concatenate\_3[0][0]

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dropout\_8 (Dropout) (None, 128, 128, 16) 0 conv2d\_16[0][0]

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conv2d\_17 (Conv2D) (None, 128, 128, 16) 2320 dropout\_8[0][0]

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conv2d\_18 (Conv2D) (None, 128, 128, 1) 17 conv2d\_17[0][0]

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Total params: 1,941,105

Trainable params: 1,941,105

Non-trainable params: 0

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2022-05-27 18:11:52.498387: I tensorflow/core/profiler/lib/profiler\_session.cc:131] Profiler session initializing.

2022-05-27 18:11:52.498403: I tensorflow/core/profiler/lib/profiler\_session.cc:146] Profiler session started.

2022-05-27 18:11:52.498444: I tensorflow/core/profiler/lib/profiler\_session.cc:164] Profiler session tear down.

2022-05-27 18:11:54.370514: I tensorflow/compiler/mlir/mlir\_graph\_optimization\_pass.cc:185] None of the MLIR Optimization Passes are enabled (registered 2)

Epoch 1/25

1/38 [..............................] - ETA: 1:11 - loss: 0.7402 - accuracy: 0.24072022-05-27 18:11:56.367105: I tensorflow/core/profiler/lib/profiler\_session.cc:131] Profiler session initializing.

2022-05-27 18:11:56.367125: I tensorflow/core/profiler/lib/profiler\_session.cc:146] Profiler session started.

2/38 [>.............................] - ETA: 25s - loss: 0.7312 - accuracy: 0.3069 2022-05-27 18:11:57.030743: I tensorflow/core/profiler/lib/profiler\_session.cc:66] Profiler session collecting data.

2022-05-27 18:11:57.034920: I tensorflow/core/profiler/lib/profiler\_session.cc:164] Profiler session tear down.

2022-05-27 18:11:57.038641: I tensorflow/core/profiler/rpc/client/save\_profile.cc:136] Creating directory: logs/train/plugins/profile/2022\_05\_27\_18\_11\_57

2022-05-27 18:11:57.041314: I tensorflow/core/profiler/rpc/client/save\_profile.cc:142] Dumped gzipped tool data for trace.json.gz to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.trace.json.gz

2022-05-27 18:11:57.047332: I tensorflow/core/profiler/rpc/client/save\_profile.cc:136] Creating directory: logs/train/plugins/profile/2022\_05\_27\_18\_11\_57

2022-05-27 18:11:57.047612: I tensorflow/core/profiler/rpc/client/save\_profile.cc:142] Dumped gzipped tool data for memory\_profile.json.gz to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.memory\_profile.json.gz

2022-05-27 18:11:57.049108: I tensorflow/core/profiler/rpc/client/capture\_profile.cc:251] Creating directory: logs/train/plugins/profile/2022\_05\_27\_18\_11\_57

Dumped tool data for xplane.pb to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.xplane.pb

Dumped tool data for overview\_page.pb to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.overview\_page.pb

Dumped tool data for input\_pipeline.pb to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.input\_pipeline.pb

Dumped tool data for tensorflow\_stats.pb to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.tensorflow\_stats.pb

Dumped tool data for kernel\_stats.pb to logs/train/plugins/profile/2022\_05\_27\_18\_11\_57/Ryans-MacBook-Pro.local.kernel\_stats.pb

38/38 [==============================] - 27s 676ms/step - loss: 0.6025 - accuracy: 0.7163 - val\_loss: 0.4192 - val\_accuracy: 0.7718

Epoch 2/25

38/38 [==============================] - 24s 626ms/step - loss: 0.3394 - accuracy: 0.8241 - val\_loss: 0.2245 - val\_accuracy: 0.9054

Epoch 3/25

38/38 [==============================] - 24s 637ms/step - loss: 0.2197 - accuracy: 0.9150 - val\_loss: 0.1609 - val\_accuracy: 0.9342

Epoch 4/25

38/38 [==============================] - 24s 625ms/step - loss: 0.1519 - accuracy: 0.9399 - val\_loss: 0.1482 - val\_accuracy: 0.9422

Epoch 5/25

38/38 [==============================] - 24s 630ms/step - loss: 0.1363 - accuracy: 0.9455 - val\_loss: 0.1302 - val\_accuracy: 0.9511

Epoch 6/25

38/38 [==============================] - 24s 633ms/step - loss: 0.1287 - accuracy: 0.9494 - val\_loss: 0.1114 - val\_accuracy: 0.9576

Epoch 7/25

38/38 [==============================] - 24s 637ms/step - loss: 0.1207 - accuracy: 0.9532 - val\_loss: 0.1056 - val\_accuracy: 0.9584

Epoch 8/25

38/38 [==============================] - 24s 626ms/step - loss: 0.1120 - accuracy: 0.9561 - val\_loss: 0.0992 - val\_accuracy: 0.9621

Epoch 9/25

38/38 [==============================] - 24s 635ms/step - loss: 0.1078 - accuracy: 0.9575 - val\_loss: 0.0972 - val\_accuracy: 0.9632

Epoch 10/25

38/38 [==============================] - 25s 647ms/step - loss: 0.1069 - accuracy: 0.9580 - val\_loss: 0.0947 - val\_accuracy: 0.9635

Epoch 11/25

38/38 [==============================] - 24s 638ms/step - loss: 0.1038 - accuracy: 0.9595 - val\_loss: 0.0975 - val\_accuracy: 0.9616

Epoch 12/25

38/38 [==============================] - 24s 637ms/step - loss: 0.1034 - accuracy: 0.9596 - val\_loss: 0.0935 - val\_accuracy: 0.9641

Epoch 13/25

38/38 [==============================] - 24s 635ms/step - loss: 0.0986 - accuracy: 0.9616 - val\_loss: 0.0902 - val\_accuracy: 0.9654

Epoch 14/25

38/38 [==============================] - 24s 642ms/step - loss: 0.0995 - accuracy: 0.9615 - val\_loss: 0.0921 - val\_accuracy: 0.9642

Epoch 15/25

38/38 [==============================] - 24s 639ms/step - loss: 0.1007 - accuracy: 0.9606 - val\_loss: 0.0913 - val\_accuracy: 0.9659

19/19 [==============================] - 4s 209ms/step

3/3 [==============================] - 1s 142ms/step

3/3 [==============================] - 0s 129ms/step

/Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages/skimage/io/\_plugins/matplotlib\_plugin.py:150: UserWarning: Low image data range; displaying image with stretched contrast.

lo, hi, cmap = \_get\_display\_range(image)

ryanyxwang@Ryans-MacBook-Pro DigitalScreeni\_Tutorial %