

## sample\_report.md

This report contains various screenshots depicting the different stages of the project. All the images are annotated with proper title but please look at the image to check what it represents or which part of project it demonstrated.

## Training Console images

### Training start

The screenshot shows a Jupyter Notebook interface with several tabs open. The main area displays Python code for initializing a neural network configuration. Below the code, a terminal window shows the execution of a script named `UNetInferenceAgent.py`. The terminal output indicates the training process is starting, with logs for batches 226, 227, and 228, and a validation step. The GPU usage is shown as 45 HR 11 MIN.

```
"""  
Holds configuration parameters  
"""  
def __init__(self):  
    self.name = "Basic_unet"  
    self.root_dir = r"../data/out"  
    self.n_epochs = 10  
    self.learning_rate = 0.0002  
    self.batch_size = 8  
    self.patch_size = 64  
    self.test_results_dir = "../result"  
  
if __name__ == "__main__":  
    # Get configuration
```

```
Batch 226. Data shape torch.Size([8, 1, 64, 64]) Loss 0.022699479013681412  
Batch 227. Data shape torch.Size([8, 1, 64, 64]) Loss 0.011575466953217983  
Batch 228. Data shape torch.Size([5, 1, 64, 64]) Loss 0.02069450356066227  
Validation complete  
Training epoch 1...  
  
Epoch: 1 Train loss: 0.012436924502253532, 0.1% complete  
.....  
Epoch: 1 Train loss: 0.006050456315279007, 1.6% complete  
.....  
Epoch: 1 Train loss: 0.016188306733965874, 3.0% complete
```

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Training Complete

Chrome File Edit View History Bookmarks People Tab Window Help 100% Tue 19 May 3:18:18 PM

classroom.udacity.com/nanodegrees/nd320-beta/part/7ab3170c-e20f-4a47-8425-7ba7482c0eca/modules/c2693... ☆

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### Workspace for Section 2

SEND FEEDBACK

README.md run\_ml\_pipeline.py UNetExperiment.... UNetInferenceAg... results.json

/ > home > workspace > result > 2020-05-19\_0826\_Basic\_unet

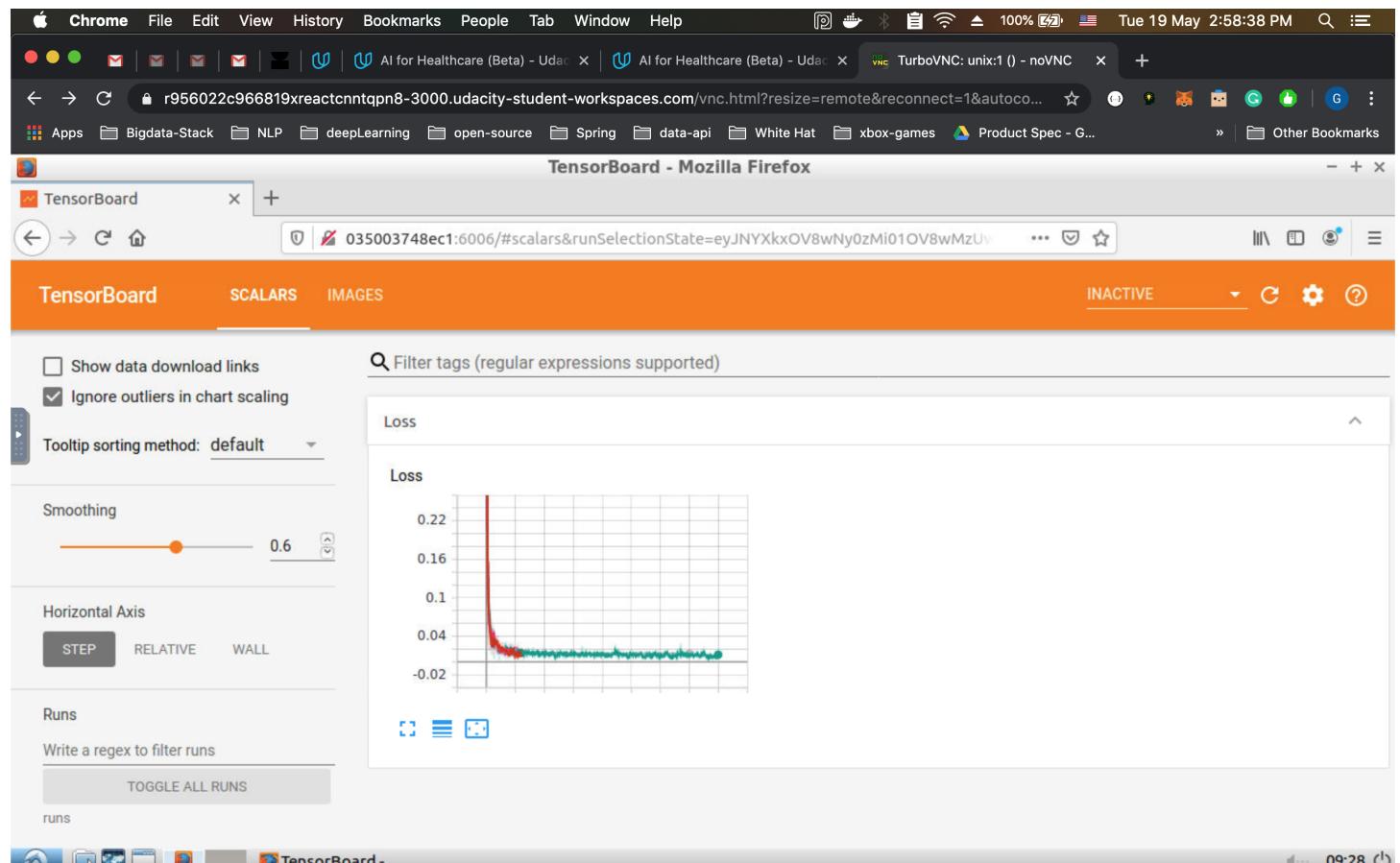
model.pth results.json

```

1 <
2   "volume_stats": [
3     {
4       "filename": "hippocampus_044.nii.gz",
5       "dice": 0.9099378881987578,
6       "jaccard": 0.8347578347578347
7     },
8     {
9       "filename": "hippocampus_381.nii.gz",
10      "dice": 0.9163024121741946,
11      "jaccard": 0.8455333134149985
12    },
13    {
14      "filename": "hippocampus_251.nii.gz",
15      "dice": 0.8959622752726201,
16      "jaccard": 0.8115323011211959
17    },
18    {
19      "filename": "hippocampus_221.nii.gz",
20      ...
21    }
22  ]
23
24  BASH Terminal 1 Terminal 2
25
26 hippocampus_333.nii.gz Dice 0.8634. 94.23% complete
27 hippocampus_351.nii.gz Dice 0.9104. 96.15% complete
28 hippocampus_394.nii.gz Dice 0.9053. 98.08% complete
29 hippocampus_354.nii.gz Dice 0.8971. 100.00% complete
30
31 Testing complete.
32 (medai) root@035003748ec1:/home/workspace/src#
```

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## Tensor Board loss



![Tensorboard w/line](with\_line.png)

## Orthanc Server

Workspace for Section 3

SEND FEEDBACK

send\_result.sh send\_volume.sh start\_listener.sh

```

#!/bin/bash
curl -X POST http://localhost:8042/tools/execute-script --data-binary @route_dicom.lua -v
sudo storesc 106 -v -aet HIPPOAI -od ../../result/TestVolumes --sort-on-study-uid st

```

BASH Terminal 1

```

W0519 11:25:51.920128 LuaContext.cpp:104] Lua says: Lua toolbox installed
W0519 11:25:51.920264 ServerContext.cpp:323] Disk compression is disabled
W0519 11:25:51.920304 ServerIndex.cpp:1636] No limit on the number of stored patients
W0519 11:25:51.920413 ServerIndex.cpp:1653] No limit on the size of the storage area
W0519 11:25:51.921608 ServerContext.cpp:168] Reloading the jobs from the last execution of Orthanc
W0519 11:25:51.921833 JobsEngine.cpp:283] The jobs engine has started with 2 threads
W0519 11:25:51.922539 main.cpp:1012] DICOM server listening with AET ORTHANC on port: 4242
W0519 11:25:51.922599 HttpServer.cpp:1282] HTTP compression is enabled
W0519 11:25:51.922663 main.cpp:910] =====> Remote LUA script execution is enabled. Review your configuration option "ExecuteLuaEnabled". Your setup is POSSIBLY INSECURE <===== 
W0519 11:25:51.925310 HttpServer.cpp:1189] HTTP server listening on port: 8042 (HTTPS encryption is disabled, remote access is not allowed)
W0519 11:25:51.925368 main.cpp:719] Orthanc has started

```

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## Send Volume

Workspace for Section 3

SEND FEEDBACK

send\_result.sh send\_volume.sh start\_listener.sh

BASH Terminal 1 Terminal 2 Terminal 3

```

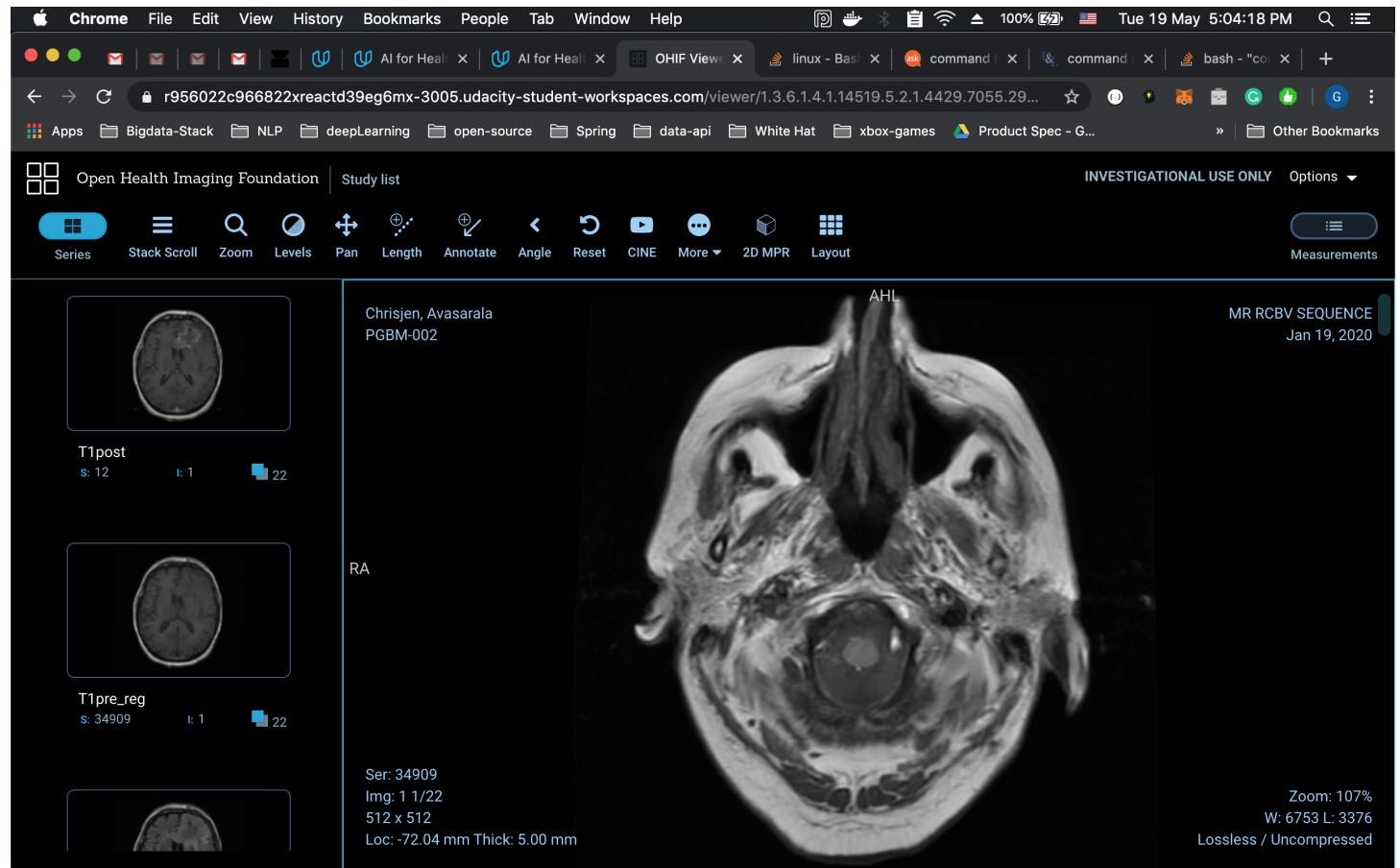
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 115, MR)
XMIT: .....
I: Received Store Response (Success)
I: Sending file: /data/TestVolumes/Study1/12-T1post-05670/000013.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 116, MR)
XMIT: .....
I: Received Store Response (Success)
I: Sending file: /data/TestVolumes/Study1/12-T1post-05670/000009.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 117, MR)
XMIT: .....
I: Received Store Response (Success)
I: Sending file: /data/TestVolumes/Study1/12-T1post-05670/000017.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 118, MR)
XMIT: .....
I: Received Store Response (Success)
I: Sending file: /data/TestVolumes/Study1/12-T1post-05670/000000.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 119, MR)
XMIT: .....
I: Received Store Response (Success)
I: Sending file: /data/TestVolumes/Study1/12-T1post-05670/000004.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit

```

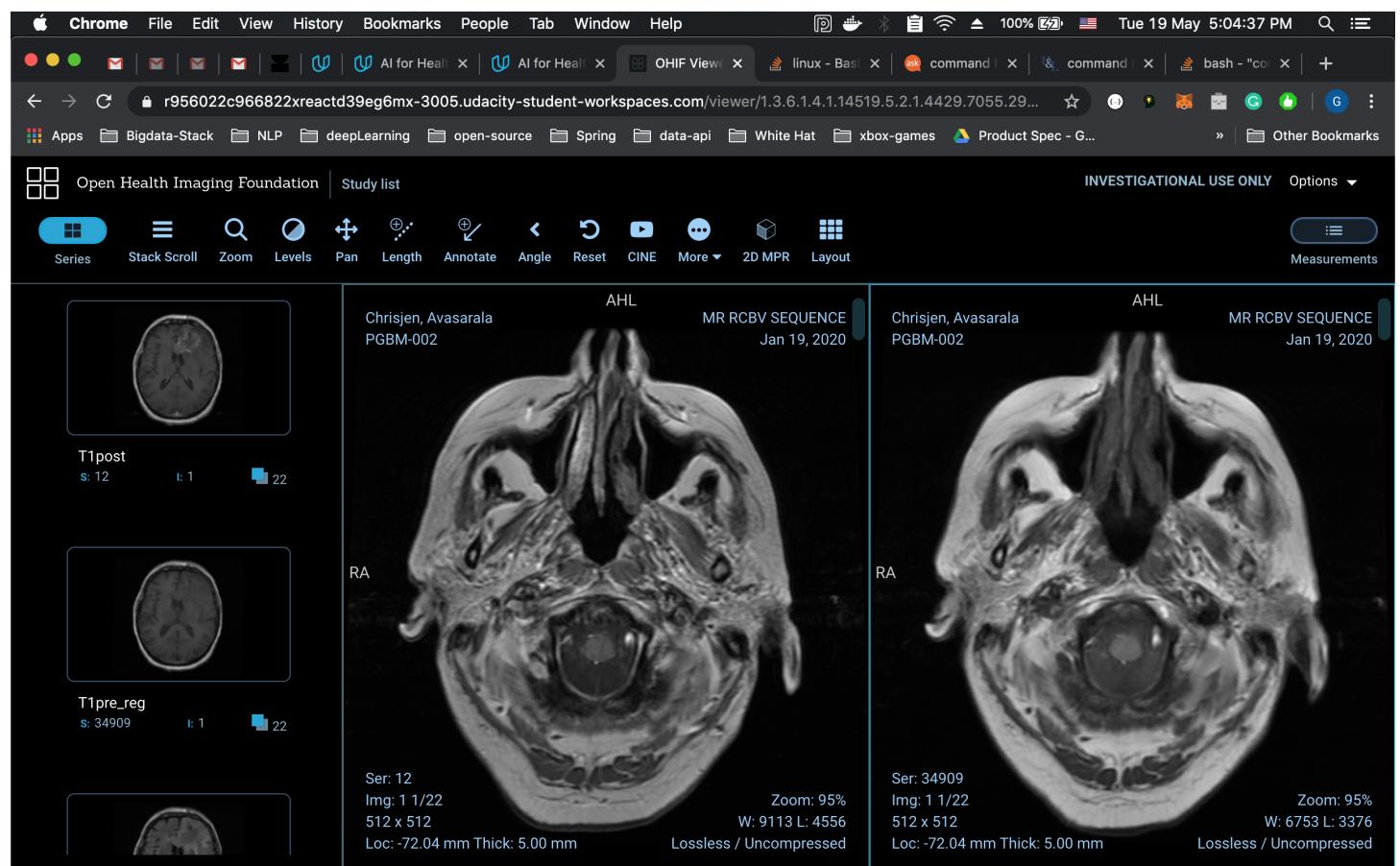
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## OHF Viewer

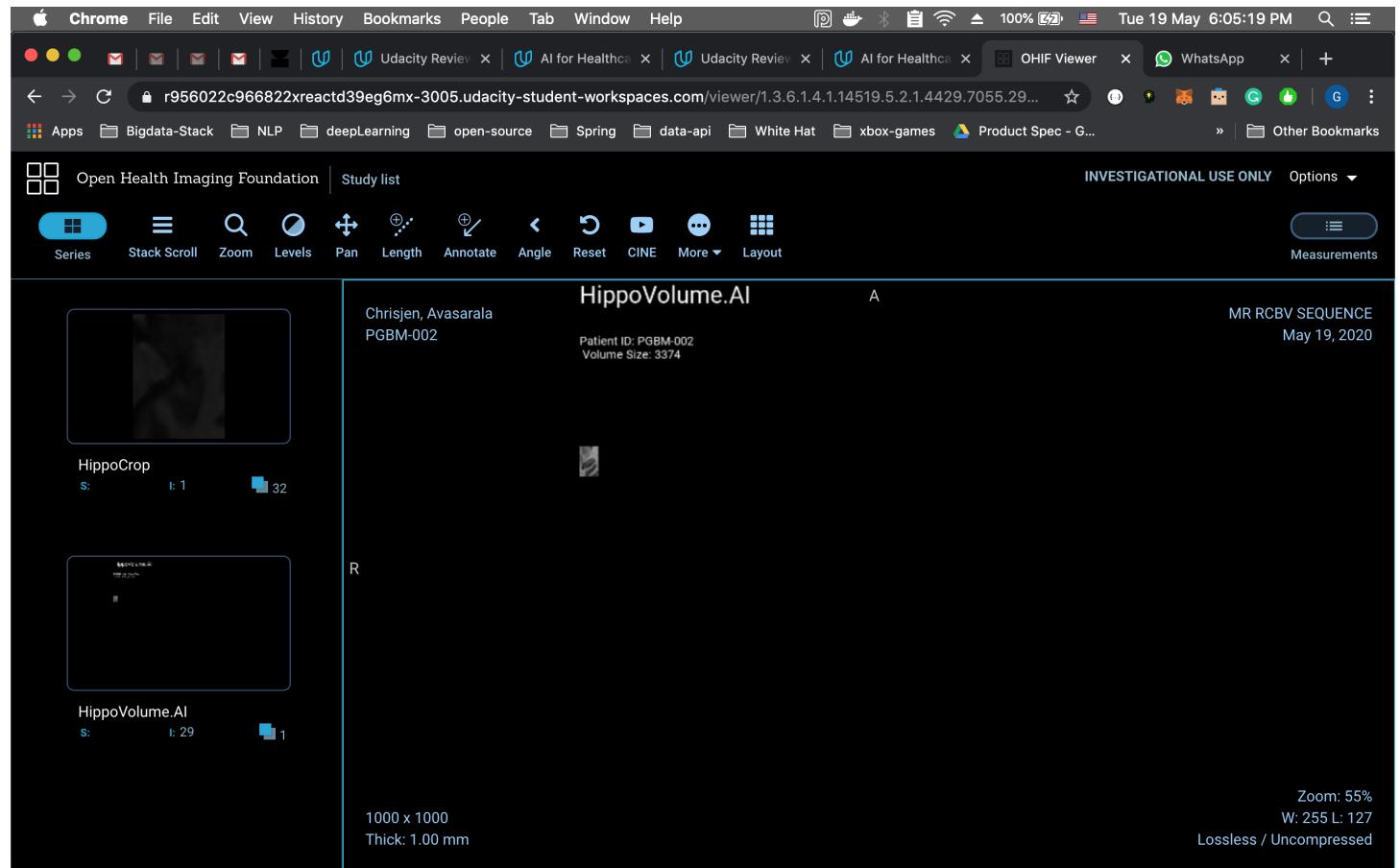
### OHF View 1



## OHF View 2



## OHF Volum view



## sotrescu command

```

inference_dcm.py      X     UNetInferenceAg...      X     send_result.sh      X
1  #!/bin/bash
2
3  storescu 127.0.0.1 4242 -v -aec HIPPOAI ./result/report.dcm

(medai) root@4545c36b6762:/home/workspace/src# storescu 127.0.0.1 4242 -v -aec HIPPOAI ./result/report.dcm
I: checking input files ...
I: Requesting Association
I: Association Accepted (Max Send PDV: 16372)
I: Sending file: ./result/report.dcm
I: Converting transfer syntax: Little Endian Explicit -> Little Endian Explicit
I: Sending Store Request (MsgID 1, SC)
XMIT: .....
I: Received Store Response (Success)
I: Releasing Association
(medai) root@4545c36b6762:/home/workspace/src# 

```

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