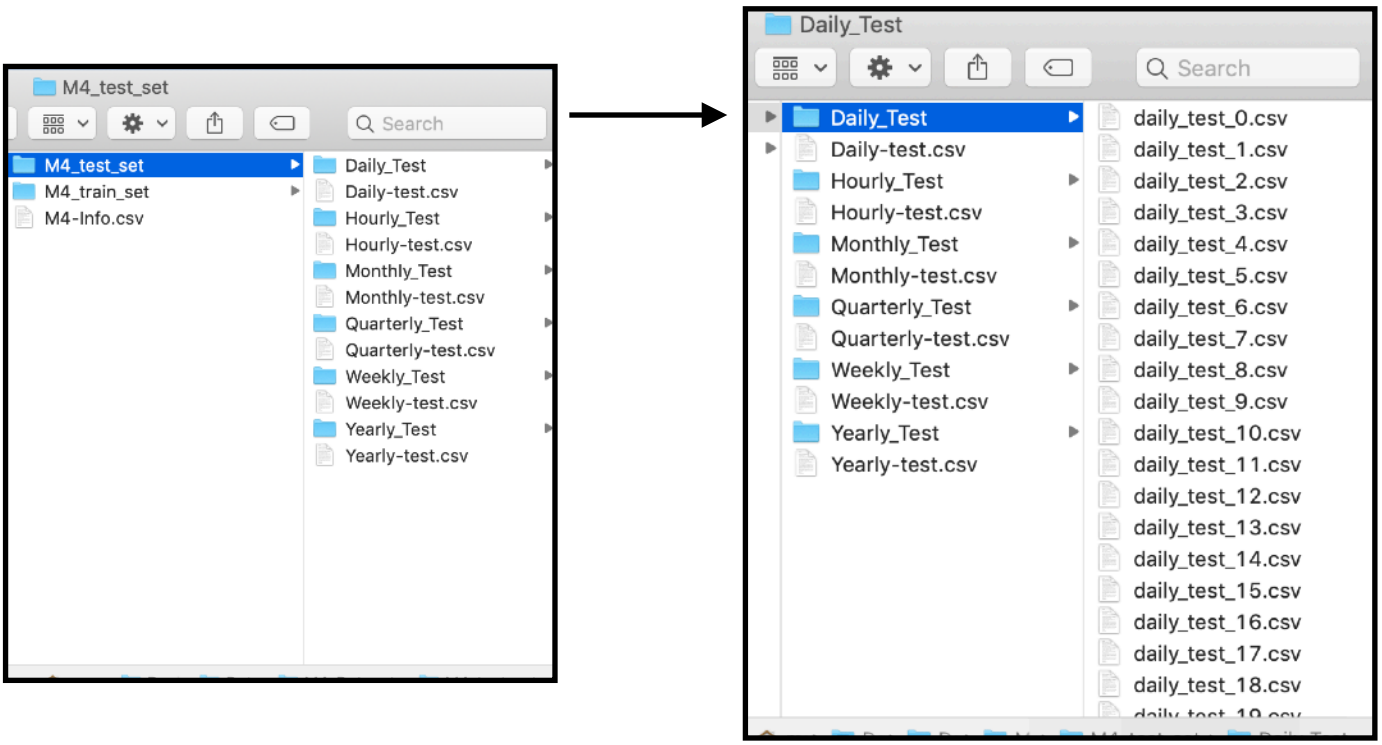
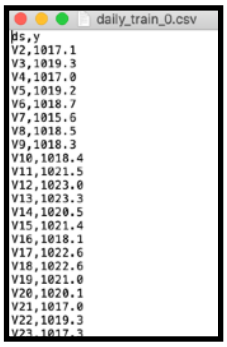
I have downloaded the big M4_Dataset, there were M4_train_set and M4_test_set. Under these folders;

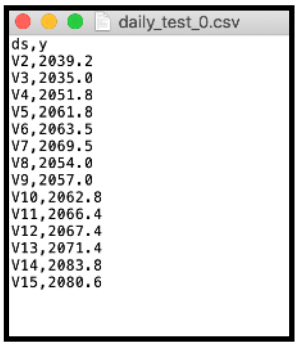
- Daily-test.csv - 4227 data files
- Hourly-test.csv - 414 data files
- Monthly-test.csv - 48000 data files
- Quarterly-test.csv - 24000 data files
- Weekly-test.csv - 359 data files
- Yearly-test.csv - 23000 data files

then I have split these big csv files into smaller ones, so they can be tested quickly and (tests-results) variables can be handled with accuracy.



this is how a train and test file looks (ds, y is for facebook.prophet);





In the code, I am traversing over this files with an f stream, for now we are only trying a few files, but when the improvements are made, this file number can be pushed up.

```
for i in range(3):  # here size_daily etc. can be used but since it takes very long, i use a smaller number for testing

    path_train = f'/Users/mac/Desktop/Datasets/M4_Dataset/M4_train_set/Daily_Train/daily_train_{i}.csv'
    path_test = f'/Users/mac/Desktop/Datasets/M4_Dataset/M4_test_set/Daily_Test/daily_test_{i}.csv'
```

Then I am trying to prepare the data for neural networks, adding time steps, splitting to train and validation sets in train file and not splitting in test file. Normalising between 0.001 and 1 (when i normalise to 0 percentage error becomes inf)

I will add more parameters to the parameters list to try many different optimisations.

But there is one thing I did not understand well;

The MAPE scores vary very strongly. This did not happen at my first trial, i get generally about 0.04 - 0.08 and i was surprised since this looked better than MAPE scores on the M4 Competition paper.

But somehow on this attempt, scores seem abnormal to be, sometimes 0.01, sometimes 10.xx, which is a very big variation. I am not sure if I am calculating them false, like a transformation (MinMaxScaler) problem…

```
2020-10-26 09:46:38.721262: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2020-10-26 09:46:38.736715: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x7fce
2020-10-26 09:46:38.736731: I tensorflow/compiler/xla/service/service.cc:176]   StreamExecutor d
Epoch 00011: early stopping
14/14 [==============================] - 0s 1ms/step - loss: 0.1661 - mse: 0.1661



Epoch 00192: early stopping
14/14 [==============================] - 0s 1ms/step - loss: 0.0196 - mse: 0.0196



Epoch 00038: early stopping
[-0.09285844] [0.0732434] [{'batch_size': 32, 'epochs': 1000}]
1/1 [==============================] - 0s 346us/step - loss: 0.0363 - mse: 0.0363
-0.03633064031600952
MAPE:  0.06711055876107955

Process finished with exit code 0
```

This MAPE seems ok, and the mse also indicates it is close.

But this one for example is huge:

```
2020-10-26 09:50:18.497164: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorF
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2020-10-26 09:50:18.509683: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x7
2020-10-26 09:50:18.509700: I tensorflow/compiler/xla/service/service.cc:176]   StreamExecuto
Epoch 00059: early stopping
15/15 [==============================] - 0s 1ms/step - loss: 0.0312 - mse: 0.0312


Epoch 00050: early stopping
15/15 [==============================] - 0s 1ms/step - loss: 0.0119 - mse: 0.0119


Epoch 00047: early stopping
[-0.0215268] [0.00966603] [{'batch_size': 32, 'epochs': 1000}]
predicted:
 [0.27941835 0.30684072 0.23722345 0.29379782 0.24033278 0.22628753
 0.16114207 0.11848384 0.19196072 0.2996195  0.4233688 ]
MAPE:  22.349962270914784

Process finished with exit code 0
```

I believe there should be a mistake somewhere, but i could not find it by now. I will keep looking.