ReadMe: FCLSTM

HybridModelFCLSTM(

(hybridNetwork): Sequential(

(0): Linear(in\_features=61, out\_features=200, bias=True)

(1): ReLU()

(2): Linear(in\_features=200, out\_features=200, bias=True)

(3): ReLU()

(4): Dropout(p=0.3, inplace=False)

(5): LSTM(200, 200, dropout=0.3)

)

(endLinearLayer): Linear(in\_features=200, out\_features=24, bias=True)

)

1. TR-VAL window normale
   * **No FineTuning**

**setting = {**

**"window\_size": 64, # var**

**"test\_split\_size": 0.10, # var**

**"dimTrValDataSet": 0.90, # var**

**"input\_size": 61, # fix**

**"num\_lstm\_layers": 1, # var**

**"lstm\_size": 200, # fix**

**"dropout": 0.35, # var**

**"nStepsAhead": 24, # var**

**"l1\_factor": 1e-5, # var**

**"weight\_decay": 0.001, # var**

**"trW": 4, # var**

**"vlWl": 2, # var**

**"batch\_size": 64, # var in [16, 32, 64, 128, 256]**

**"num\_epochs": 500, # var**

**"learning\_rate": 3e-4, # Adam # var 0.01 se uso RMSprop**

**"optimizer": "Adam", # "RMSprop" , # var https://pytorch.org/docs/stable/generated/torch.optim.RMSprop.html#torch.optim.RMSprop**

**"momentum": 0.8, # var**

**"scheduler": "ReduceLROnPlateau", # "CosineAnnealingWarmRestarts", "OneCycleLR" # var**

**"scheduler\_factor": 0.5, # var**

**"scheduler\_patience": 3, # var**

**"scheduler\_min\_lr": 1e-6,**

**"l1\_lambda":0.01,**

**"eps": 1e-8,**

**"alpha": 0.99,**

**"patience": 40,**

**"min\_delta": 0.005,**

**"device": "cuda"**

**}**

1. Esecuzione con database standard predizione HLC3
2. Esecuzione con database LC2

3. Esecuzione con database OHLC4

* **FineTuning semplice**
* **FineTuning con F-Loss personalizzata**
* PCA

2. TR-VAL k-fold validation

* + **No FineTuning**

1. Esecuzione con database standard predizione HLC3
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3. Esecuzione con database OHLC4

* FineTuning semplice
* FineTuning con F-Loss personalizzata
* PCA

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* Risultati rete 2FCLSTM NO fine tuning, NO PCA, pred HLC3 → 24 ahead (versione base), NO kFold
* link output [predictionsResult](https://drive.google.com/drive/folders/1iOQSxiDFi-elDXhCTItQVmyXpHQhsXNm?usp=drive_link)
* link code [code](https://colab.research.google.com/drive/1IW3XJ7g7Qt_qCU792T1-967JL8Eim1Kn#scrollTo=XYf64SlpfuNt)
* link wandb [wandb](https://wandb.ai/stefanobutera98/KA-TY-AI-trValW-FCLSTM/runs/v9wx6cyv?workspace=user-stefanobutera98)
* link modelPTH [modelPTH](https://drive.google.com/file/d/1-28g-73WIwbdczy1LfB-VmnV87Mrf7ym/view?usp=sharing)

Risultati

TRset:

| MSE | RMSE | R2 |
| --- | --- | --- |
| 0.00031961886735047993 | 0.017877887664667767 | 0.9949469560011602 |

VLwin:

| MSE | RMSE | R2 |
| --- | --- | --- |
| 0.000319 | 0.017864 | 0.994965 |

TSwin:

| MSE | RMSE | R2 |
| --- | --- | --- |
| 0.000147 | 0.012126 | 0.984353 |

Scatter plot on TS result