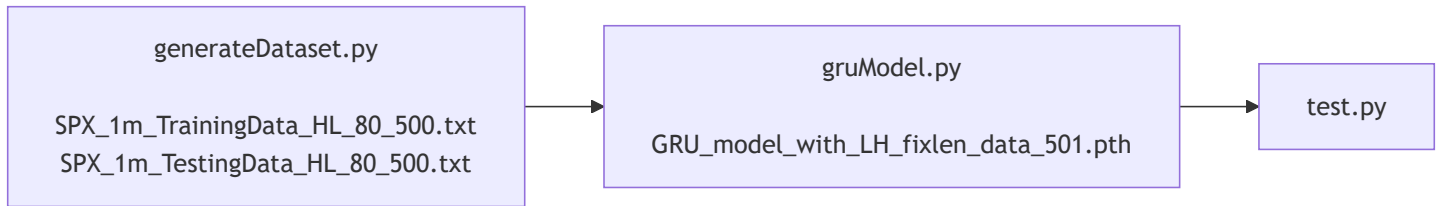


# GRU Action Forecast



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## Todo

1. change training data format
2. send Test output to a file for future reference
3. all global variables should read from a configuration file
4. clean code make all definitions at beginning
5. use class
6. get rid of [zigzagplus1.py](#)
7. optimize Debug
8. optimize logging

## Generate Dataset

- [Generate dataset Source Code](#)

## Output files

1. training dataset
2. testing dataset

## 5 column data group

1. day of week
2. time of day
3. close price
4. velocity
5. acceleration

first column

1=long

0=short

total 80 points end by long/short point for each row

## Input

SQLite database file: [data/stock\_bigdata\_2019-2023.db]

## Output

```
data > SPX_1m_TestingData_HL_80_400.txt |> data
```

```
1   0,[ (7, 19.35, 0.21730876605247665, -0.027582356225504256, -0.028252372976059592), (7, 19.366666666666667, 0.1897264098269724, -0.0)
2   0,[ (1, 0.6833333333333333, 0.9994003597841891, 0.0005996402158109371, -0.0011992804316218741), (1, 0.7, 1.0, -0.000599640215810937
3   1,[ (5, 1.3333333333333333, 0.18829215869882895, -0.07926960257790806, 0.1595059076262796), (5, 14.15, 0.10902255639092089, 0.080236
4   1,[ (5, 14.65, 0.4788705703998525, 0.0665150653780765, -0.06765207504263171), (5, 14.666666666666666, 0.5453856357779292, -0.0011376
5   0,[ (1, 2.55, 0.0, 0.044973085505142196, -0.024309776002756092), (1, 2.5666666666666664, 0.044973085505142196, 0.020663309602386104,
```

- Training Dataset
- Testing Dataset

## Create GRU Model

- Generate GRU Action Forecast model

## Input

- [Training Dataset](#)
- [Testing Dataset](#)

## Output

- [/GRU\\_model\\_with\\_LH\\_fixlen\\_data\\_501.pth](#)

## Test the model

- [Test model get R-Square and MSE](#)

## Input

- [/GRU\\_model\\_with\\_LH\\_fixlen\\_data\\_501.pth](#)

## Output

Current date and time: 2024-09-23 09:36:55

1. Load testing data from data/SPX\_1m\_TestingData\_HL\_80\_500.txt

Data shape: (1684, 80, 5)

Targets shape: (1684, 1)

2. Define dataset and dataloader

Current date and time: 2024-09-23 09:36:56

3. Instantiate the model, define the loss function and the optimize

Current date and time: 2024-09-23 09:36:56

Number of layers: 5

3. Load trained model from GRU\_model\_with\_LH\_fixlen\_data\_501.pth

4. Start testing loop

Current date and time: 2024-09-23 09:36:56

Test Loss (MSE): 0.00353319

Mean Absolute Error (MAE): 0.02026430

R-squared (R2): 0.99644500

Current date and time: 2024-09-23 09:36:58

Saved categorized signals to file : data/SPX\_1m\_HL\_80\_500\_GRU\_fixlen\_500.txt

Current date and time: 2024-09-23 09:36:59