**Problem Statement:**

* Target
  + Price rise / fall
  + Close price
  + Close, high, low
  + Mean and std of price
* Time frames:
  + 1d
  + 1w
  + 4h
  + 1h
* Features
  + Close price
  + OHLC
  + OHLC + volume
  + OHLC + volume + funding rate
  + OHLC + volume + funding rate + fear and greed index
  + OHLC + volume + funding rate + fear and greed index + DXY
  + + Technical indicators
  + Market profile
  + Order flow
* Models
  + NN
    - GRU
    - LSTM
  + NN + ICEEMDAN
  + NN + ICEEMDAN + Error correction
* Training scheme:
  + Train on the training set, test the whole of the test set
  + Train of the training set, incremental training for each test sample predicted

**Milestones:**

1. Select the best model and setting for each target and time frame on a fixed dataset:

* Target: next close price:
  + Time frame: 1d:
    - Feature: close price:
      * Model: NN (Model 1)
        + GRU 🡪 optimize sequence size
        + LSTM 🡪 optimize sequence size
        + Select one model for the rest of the experiments
      * Model: NN + ICEEMDAN (Model 2)
      * Model: NN + ICEEMDAN + Error correction (Model 3)
    - Feature: OHLC:
      * Model: NN
      * Model: NN + ICEEMDAN
      * Model: NN + ICEEMDAN + Error correction
    - Feature: OHLC + volume:
      * Model: NN
      * Model: NN + ICEEMDAN
      * Model: NN + ICEEMDAN + Error correction
    - Feature: OHLC + volume + funding rate:
      * Model: NN
      * Model: NN + ICEEMDAN
      * Model: NN + ICEEMDAN + Error correction
    - Feature: OHLC + volume + funding rate + fear and greed index:
      * Model: NN
      * Model: NN + ICEEMDAN
      * Model: NN + ICEEMDAN + Error correction
    - Feature: OHLC + volume + funding rate + fear and greed index + DXY:
      * Model: NN
      * Model: NN + ICEEMDAN
      * Model: NN + ICEEMDAN + Error correction
  + Time frame: 1w
  + Time frame: 4h
  + Time frame: 1h
* Target: next close, high, and low

1. Find the optimal number of training data for each time frame for predicting the next sample
2. Automatically getting the new data at the correct time, training the network, and predicting the next data point