Use GPU: cuda:0

1

>>>>>>>start training : ETTh1\_96\_24\_Autoformer\_ETTh1\_ftM\_sl96\_ll48\_pl24\_dm512\_nh8\_el2\_dl1\_df2048\_fc1\_ebtimeF\_dtTrue\_Exp\_0>>>>>>>>>>>>>>>>>>>>>>>>>>

<class '\_\_main\_\_.Dataset\_ETT\_hour'>

1

train 8521

<class '\_\_main\_\_.Dataset\_ETT\_hour'>

1

val 2857

<class '\_\_main\_\_.Dataset\_ETT\_hour'>

1

test 2857

iters: 100, epoch: 1 | loss: 0.5602309

speed: 0.1159s/iter; left time: 296.7614s

iters: 200, epoch: 1 | loss: 0.5485061

speed: 0.1148s/iter; left time: 282.4890s

Epoch: 1 cost time: 30.843868255615234

Epoch: 1, Steps: 266 | Train Loss: 0.6341507 Vali Loss: 0.8534182 Test Loss: 1.3313261

Validation loss decreased (inf --> 0.853418). Saving model ...

Updating learning rate to 0.0001

iters: 100, epoch: 2 | loss: 0.5753309

speed: 0.2849s/iter; left time: 653.9170s

iters: 200, epoch: 2 | loss: 0.5932873

speed: 0.1102s/iter; left time: 241.8078s

Epoch: 2 cost time: 29.983107566833496

Epoch: 2, Steps: 266 | Train Loss: 0.5388397 Vali Loss: 0.8286599 Test Loss: 1.3484920

Validation loss decreased (0.853418 --> 0.828660). Saving model ...

Updating learning rate to 5e-05

iters: 100, epoch: 3 | loss: 0.4894392

speed: 0.2774s/iter; left time: 562.7783s

iters: 200, epoch: 3 | loss: 0.5716225

speed: 0.1091s/iter; left time: 210.4107s

Epoch: 3 cost time: 29.806654453277588

Epoch: 3, Steps: 266 | Train Loss: 0.5123300 Vali Loss: 0.8850217 Test Loss: 1.4073793

EarlyStopping counter: 1 out of 3

Updating learning rate to 2.5e-05

iters: 100, epoch: 4 | loss: 0.4919134

speed: 0.2818s/iter; left time: 496.8835s

iters: 200, epoch: 4 | loss: 0.4587721

speed: 0.1099s/iter; left time: 182.8061s

Epoch: 4 cost time: 29.895896434783936

Epoch: 4, Steps: 266 | Train Loss: 0.4525110 Vali Loss: 0.7668948 Test Loss: 1.2532688

Validation loss decreased (0.828660 --> 0.766895). Saving model ...

Updating learning rate to 1.25e-05

iters: 100, epoch: 5 | loss: 0.3173919

speed: 0.2786s/iter; left time: 417.0755s

iters: 200, epoch: 5 | loss: 0.3001456

speed: 0.1094s/iter; left time: 152.8262s

Epoch: 5 cost time: 29.7652370929718

Epoch: 5, Steps: 266 | Train Loss: 0.3289156 Vali Loss: 0.6641892 Test Loss: 1.1251769

Validation loss decreased (0.766895 --> 0.664189). Saving model ...

Updating learning rate to 6.25e-06

iters: 100, epoch: 6 | loss: 0.2899451

speed: 0.2783s/iter; left time: 342.6323s

iters: 200, epoch: 6 | loss: 0.2809048

speed: 0.1096s/iter; left time: 123.9539s

Epoch: 6 cost time: 29.815651178359985

Epoch: 6, Steps: 266 | Train Loss: 0.2781455 Vali Loss: 0.6396534 Test Loss: 1.1331928

Validation loss decreased (0.664189 --> 0.639653). Saving model ...

Updating learning rate to 3.125e-06

iters: 100, epoch: 7 | loss: 0.2799870

speed: 0.2793s/iter; left time: 269.5160s

iters: 200, epoch: 7 | loss: 0.2309418

speed: 0.1098s/iter; left time: 94.9370s

Epoch: 7 cost time: 29.894029140472412

Epoch: 7, Steps: 266 | Train Loss: 0.2467097 Vali Loss: 0.6265381 Test Loss: 1.1185489

Validation loss decreased (0.639653 --> 0.626538). Saving model ...

Updating learning rate to 1.5625e-06

iters: 100, epoch: 8 | loss: 0.2032012

speed: 0.2786s/iter; left time: 194.7677s

iters: 200, epoch: 8 | loss: 0.2976699

speed: 0.1095s/iter; left time: 65.5613s

Epoch: 8 cost time: 29.79279112815857

Epoch: 8, Steps: 266 | Train Loss: 0.2292047 Vali Loss: 0.6102191 Test Loss: 1.0989412

Validation loss decreased (0.626538 --> 0.610219). Saving model ...

Updating learning rate to 7.8125e-07

iters: 100, epoch: 9 | loss: 0.2236505

speed: 0.2792s/iter; left time: 120.8878s

iters: 200, epoch: 9 | loss: 0.2230111

speed: 0.1099s/iter; left time: 36.6096s

Epoch: 9 cost time: 29.856837272644043

Epoch: 9, Steps: 266 | Train Loss: 0.2216319 Vali Loss: 0.6085467 Test Loss: 1.0962882

Validation loss decreased (0.610219 --> 0.608547). Saving model ...

Updating learning rate to 3.90625e-07

iters: 100, epoch: 10 | loss: 0.2038873

speed: 0.2793s/iter; left time: 46.6350s

iters: 200, epoch: 10 | loss: 0.2308129

speed: 0.1097s/iter; left time: 7.3484s

Epoch: 10 cost time: 29.887694597244263

Epoch: 10, Steps: 266 | Train Loss: 0.2170539 Vali Loss: 0.6114631 Test Loss: 1.1063833

EarlyStopping counter: 1 out of 3

Updating learning rate to 1.953125e-07

2

>>>>>>>testing : ETTh1\_96\_24\_Autoformer\_ETTh1\_ftM\_sl96\_ll48\_pl24\_dm512\_nh8\_el2\_dl1\_df2048\_fc1\_ebtimeF\_dtTrue\_Exp\_0<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

<class '\_\_main\_\_.Dataset\_ETT\_hour'>

1

test 2857

test shape: (89, 32, 24, 7) (89, 32, 24, 7)

test shape: (2848, 24, 7) (2848, 24, 7)

mse:1.0962879657745361, mae:0.7186880111694336

3

图表, 直方图

描述已自动生成

图表, 直方图

描述已自动生成

图表, 直方图

描述已自动生成

图表, 图示, 直方图

描述已自动生成

图表, 直方图

描述已自动生成