

NN Regression Model

Neural Network Regression Model

Load Data: I simply saved data boxing prepared to trainyear.csv testyear.csv and validateyear.csv
please change the path parameter **pwd** to the directory of file in your local env

Framework: Tensorflow and Keras

Package to download: Numpy, Matplotlib, Pandas, Tensorflow, Keras

Nodes of each layer : 49 98 147 98 1

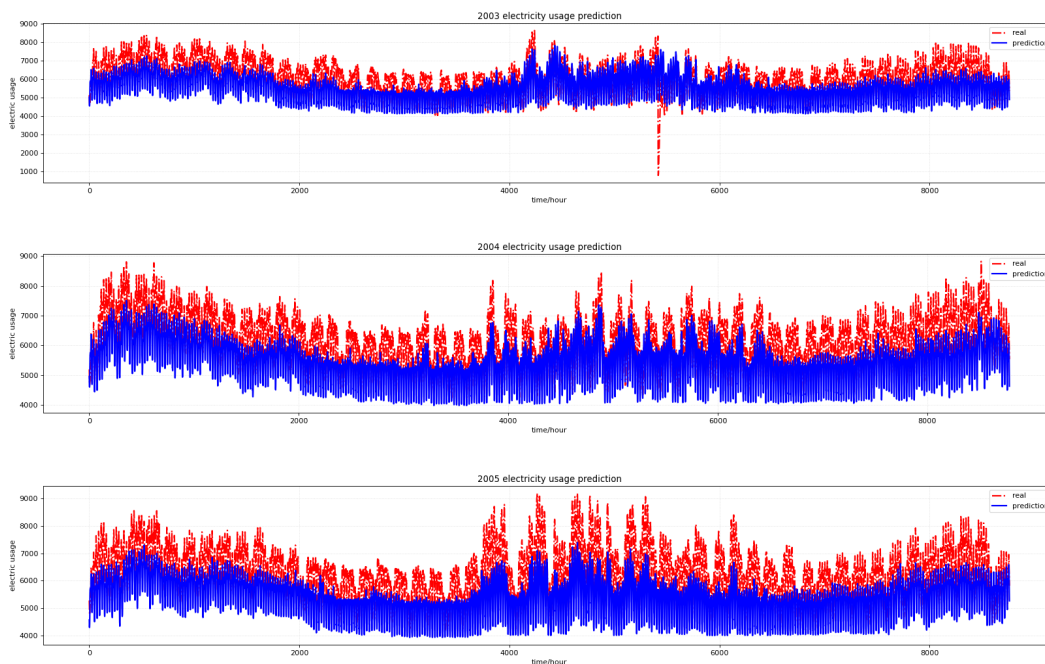
Activation function: ReLu

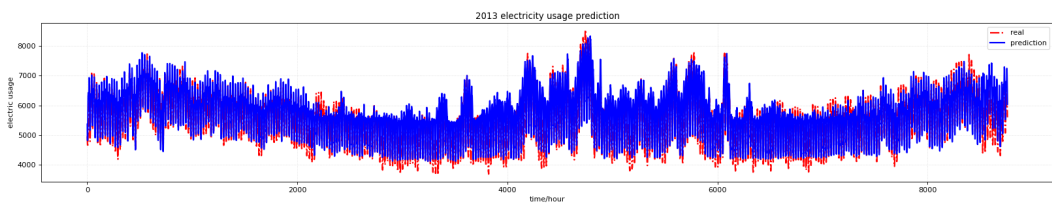
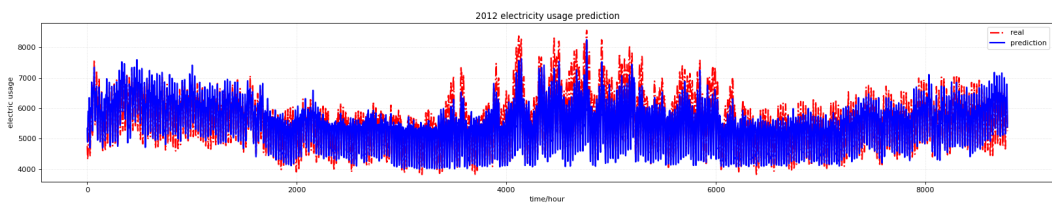
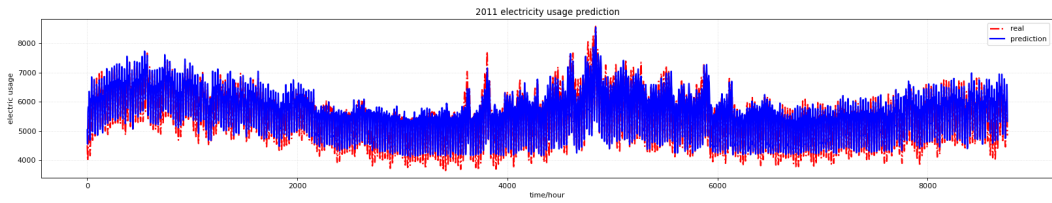
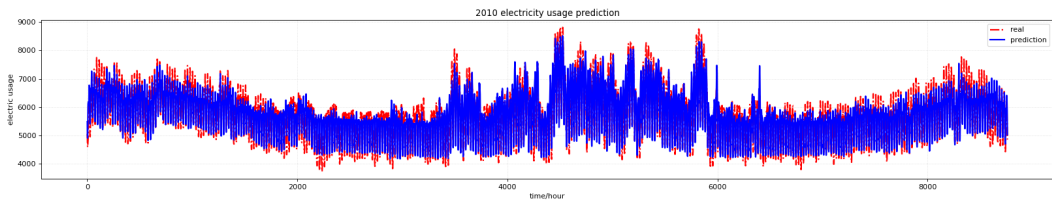
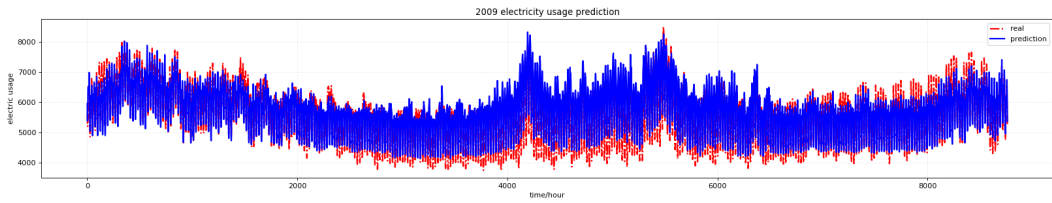
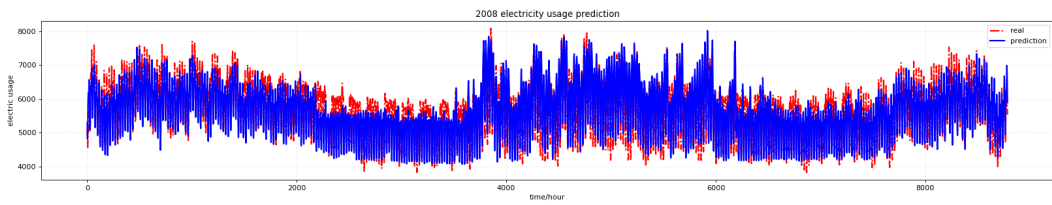
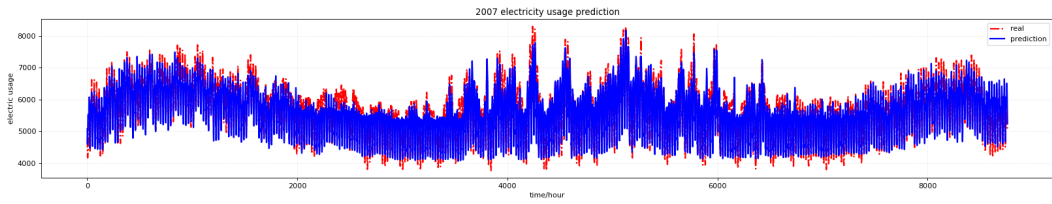
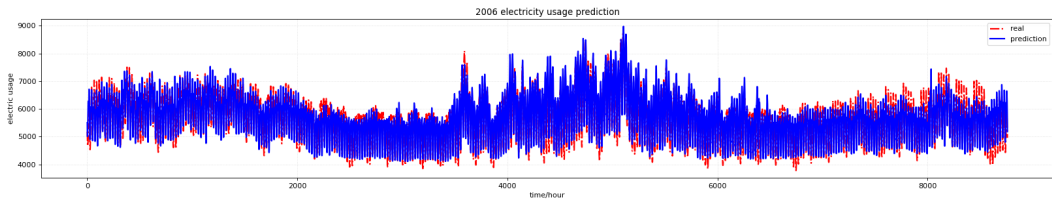
Note: Network structure is EASY to modify in #hyperparameters setting section in notebook file **elec complete**

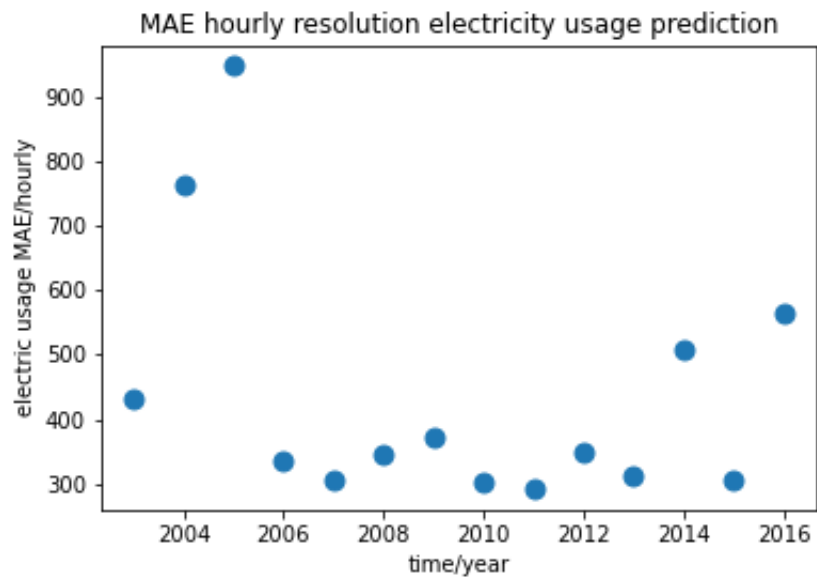
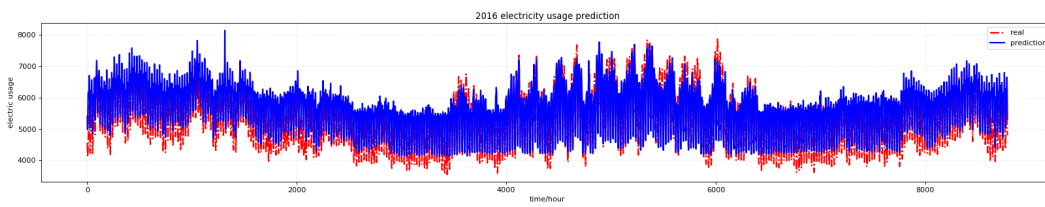
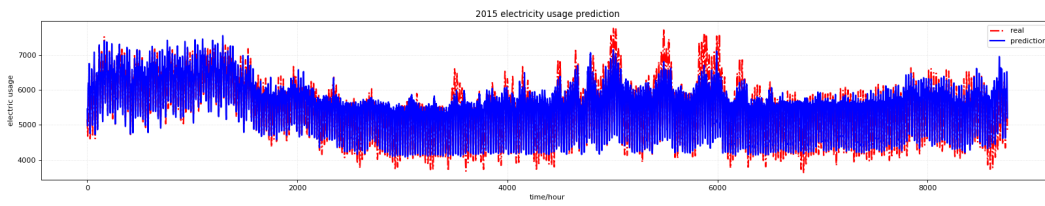
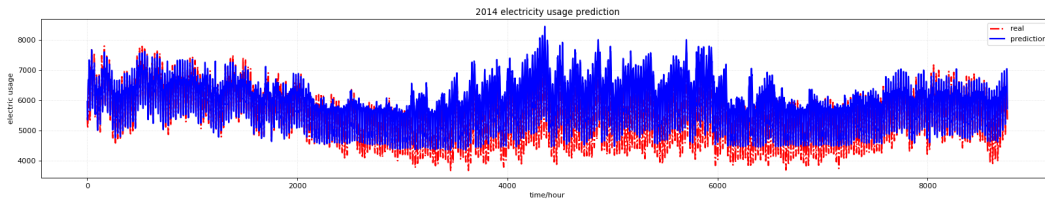
Results

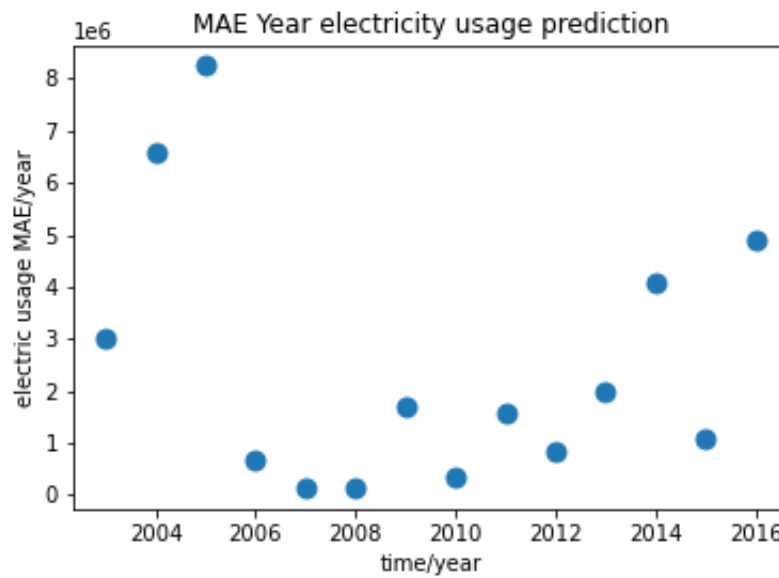
I provide all plots and evaluation metrics similar to Boxi's train/test/validation setup in order to make the model comparison work easier.

Plot resolution can be adjusted in result visualization section(but you have to run the code again, to be updated)









Discussion

1. The network structure is determined by trial(black box), currently i gave a relatively good network among all my trials. More complicated network structures will lead to model overfitting on both validation set and testing set.
2. I proposed to try AutoKeras framework that will provide auto-tuned network structures. Hopefully we can have a better prediction performance but even worse intepretability.