SDU ENERGY INFORMATICS

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Collected Experiment Report: SimpleNN - DeepNN .

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Introduction

This is an automated report for the Neural networks on real estate dataset; the following models have been analyzed:

- SimpleNN
- DeepNN

Experiment description:

Experiment with neural networks on real estate dataset

Model setup

The models have been used for the following forecast purposes:

- one_step

The models have been optimized using the following hyperparameters:

- optimizer: ['adam', 'sgd']
- epochs: [100, 200]
- batch_size: [32, 64]
- scaler: [None, StandardScaler(), MinMaxScaler(), RobustScaler(), PowerTransformer()]

And with the following search algorithms:

- grid
- random

The used performance measure is the neg_mean_absolute_error measure.

Dataset setup

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The baseline dataset used for these forecasts is
the 'Real Estate valuation from Sindian Dist., New Taipei City, Taiwan' dataset: *'Real estate valuation of houses in Taiwan, the price denotes the cost of unit area.'.*

The test size used for the forecasts is 0.2.

- Dataset 1
  - name: univariate_only_target
  - dataset_type: univariate
  - prediction_type: one_step
  - components: ['one_step_target', 'temporal_features']

- Dataset 2
  - name: multivariate
  - dataset_type: multivariate
  - prediction_type: one_step
  - components: ['one_step_target', 'feature_columns']

Results

For the models; SimpleNN, DeepNN, the following models and datasets yielded the best results.

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The best model for one_step forecasting.

The best model for one_step forecasting is the DeepNN model.
The model has been trained on the univariate_only_target dataset.

The best score for the one_step forecasting is 0.6238336665230715.

Best DeepNN forecast over time