deep_ensembles

- 1. 西班牙数据集
- 2. 美国数据集

deep_ensembles

1. 西班牙数据集

train index: [6426, 10427] train_len: 4000 test index: [14389, 15390] test_len: 1000

● 输入特征:

```
1 'wind_speed', 'sin(wd)', 'cos(wd)', 【t期】
2 'wind_speed-1', 'sin(wd)-1','cos(wd)-1', 'wind_power-1'【t-1期】
```

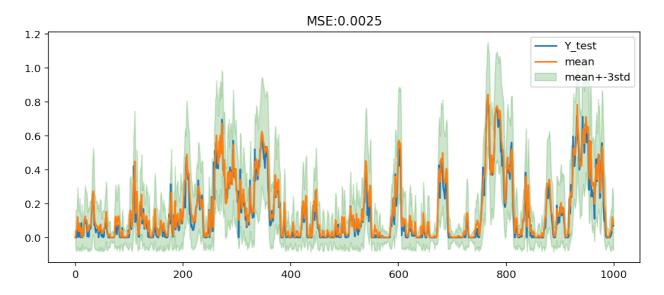
• 输出: wind_power

参数设置:

```
1
        parser = argparse.ArgumentParser()
 2
        # Ensemble size
 3
        parser.add_argument('--ensemble_size', type=int, default=5,
                            help='Size of the ensemble')
 4
 5
        # Maximum number of iterations
        parser.add_argument('--max_iter', type=int, default=5000,
 6
 7
                            help='Maximum number of iterations')
        # Batch size
 9
        parser.add_argument('--batch_size', type=int, default=10,
10
                            help='Size of batch')
        # Epsilon for adversarial input perturbation
11
12
        parser.add_argument('--epsilon', type=float, default=1e-2,
13
                             help='Epsilon for adversarial input perturbation')
14
        # Alpha for trade-off between likelihood score and adversarial score
15
        parser.add_argument('--alpha', type=float, default=0.5,
16
                            help='Trade off parameter for likelihood score and
    adversarial score')
17
        # Learning rate
18
        parser.add_argument('--learning_rate', type=float, default=0.005,
19
                            help='Learning rate for the optimization')
20
        # Gradient clipping value
21
        parser.add_argument('--grad_clip', type=float, default=100.,
22
                             help='clip gradients at this value')
```

```
# Learning rate decay
parser.add_argument('--decay_rate', type=float, default=0.99,
help='Decay rate for learning rate')
# Dropout rate (keep prob)
parser.add_argument('--keep_prob', type=float, default=0.8,
help='Keep probability for dropout')
```

test mse: 0.0025145908564548863



2. 美国数据集

train index: [3001, 7002] train_len: 4000

test index: [2000, 3001] test_len: 1000

• 输入特征:

```
1 'wind_speed', 'sin(wd)', 'cos(wd)', 【t期】
2 'wind_speed-1', 'sin(wd)-1','cos(wd)-1', 'wind_power-1'【t-1期】
```

● 输出: wind_power

参数设置:

```
1
        parser = argparse.ArgumentParser()
 2
        # Ensemble size
 3
        parser.add_argument('--ensemble_size', type=int, default=5,
                             help='Size of the ensemble')
 4
 5
        # Maximum number of iterations
 6
        parser.add_argument('--max_iter', type=int, default=5000,
 7
                             help='Maximum number of iterations')
        # Batch size
 8
 9
        parser.add_argument('--batch_size', type=int, default=10,
                             help='Size of batch')
10
        # Epsilon for adversarial input perturbation
11
```

```
parser.add_argument('--epsilon', type=float, default=1e-2,
12
13
                            help='Epsilon for adversarial input perturbation')
        # Alpha for trade-off between likelihood score and adversarial score
14
15
        parser.add_argument('--alpha', type=float, default=0.5,
                            help='Trade off parameter for likelihood score and
16
    adversarial score')
17
        # Learning rate
        parser.add_argument('--learning_rate', type=float, default=0.005,
18
19
                            help='Learning rate for the optimization')
        # Gradient clipping value
20
        parser.add_argument('--grad_clip', type=float, default=100.,
21
22
                            help='clip gradients at this value')
23
        # Learning rate decay
        parser.add_argument('--decay_rate', type=float, default=0.99,
24
                            help='Decay rate for learning rate')
25
26
        # Dropout rate (keep prob)
        parser.add_argument('--keep_prob', type=float, default=0.8,
27
                            help='Keep probability for dropout')
28
```

test mse: 0.00043997918992500905

